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THE UNIVERSITY OF ALBERTA

A STUDY OF A CAREER CHOICE PROBLEM: INDECISION VERSUS INDECISIVENESS

by

TERRANCE ROGER MOTT

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF DOCTOR OF PHILOSOPHY

IN

COUNSELLING PSYCHOLOGY

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "A Study of a Career Choice Problem: Indecision Versus Indecisiveness," submitted by Terrance Roger Mott in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Counselling Psychology.

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DEDICATION

To Helen, Jocelyn, Terry David,

Mother and Father

ABSTRACT

This study was concerned with the relationship of anxiety to career indecision by secondary school students. The results of a pilot study inspired the investigator to pursue this area of research. Specifically, this study was designed to test the empirical utility of Goodstein's (1965) constructs of indecision and indecisiveness. The purpose can be described by the general question, "Can high school students who experience difficulties in making a career decision be adequately discriminated by the constructs of indecision and indecisiveness?"

The study was conducted in two parts. The subjects for part one consisted of 120 vocationally undecided secondary school students of which 64 were female and 56 were male. Thirteen subjects were grade twelve students and the remaining 107 were grade eleven students. The subjects ranged in age from 15 to 18 years with their median age being 16 and a half years. The objective was to test the effectiveness of a Career Information Workshop (CIW) as a treatment for vocational undecidedness. A three group design which controlled for the reactive effects of the initial testing was used. The data collected for part one of this study were submitted to a two-way analysis of variance. The results confirmed the effectiveness of the CIW for the purpose intended.

Subjects who had experienced the CIW (15 boys and 25 girls) were used for part two of the study. The objective was to test the empirical validity of the indecision and indecisive constructs. Subjects were assigned to one of two groups on the basis of whether they did or did not show an increase in their degree of vocational decidedness after experiencing the CIW. Using the Attitude Scale of the Career Maturity Inventory (CMI) and Self-Evaluation Questionnaire (SEQ) scores as the dependent

measures, it was predicted that one group would be significantly more vocationally mature and exhibit significantly lower levels of state and trait anxiety than the other group. Data analysis by "t" tests supported the hypotheses by revealing that the indecision group was significantly more vocationally mature and exhibited significantly lower levels of state and trait anxiety than the indecisive group.

Approximately one month after the end of the experimental period a second data collection took place to assess the degree to which experimental results were maintained over time. The analysis of this follow-up data produced results that confirmed earlier findings. The results of this investigation were then discussed in terms of implications for vocational counselling and also in terms of further research possibilities.

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CHAPTER I

THE PROBLEM

In counselling students who need assistance in formulating career plans the traditional approach has been for the guidance counsellor to administer tests which are relevant to the issue of deciding upon an occupation or program of studies to pursue. For some students an interpretation of their performance on these tests and a discussion of the tests' implications by the counsellor for career planning is enough to enable students to formulate at least tentative occupational plans. In contrast, other students are unable to profit from this kind of guidance. These students acknowledge the results of the testing but cannot incorporate the information into their career plans. Instead, they remain vocationally undecided. The author of this study investigated the problem of career indecision with a group of secondary school students.

Background of the Problem

The manner in which decisions are reached differ among individuals; some people are "decisive," others are "indecisive." As is the case in other life decision-making situations, the ease with which a career is chosen varies among individuals.

Two types of career decision-makers have been proposed (Dysinger, 1950). The healthy experience of postponing decision in order to explore the vocational world more thoroughly is distinguished from the unhealthy avoidance of the "pain of a decision." In further explicating this distinction, Tyler (1961) has contrasted the two types of individuals as either having problems of indecision or of indecisiveness. She has suggested that those individuals with the superficial and temporary

problem of indecision are able to make use of relevant occupational information if it is given to them. Those individuals possessing the more pervasive problem of indecisiveness, however, are believed to be unable to use such information in a productive manner.

In a similar post hoc analysis, Goodstein (1965) has emphasized the etiology of both problems. Goodstein concludes that the critical diagnostic consideration in differentiating indecision and indecisiveness is "the assessment of the role of anxiety in the etiology of the problem (p. 158)." He proposes that the inability to make a vocational choice may be linked with either one of two quite different antecedent conditions. A graphic summary of the etiologies of these two problems in decision-making is presented in Figures 1 and 2.

As shown in Figure 1, what has been called "indecision" is seen as being related to a limitation of experience in the vocational development of the individual. This has restricted the opportunities of the individual to acquire or learn the responses necessary to make a choice. Anxiety for the person who experiences indecision is a consequence or result of a learning deficit and not an antecedent of it. Also, according to Goodstein, anxiety tends to be related to the career choice situation alone and does not take on a general or pervasive quality. The anxiety is seen as playing a rather minor role in the etiology of the problem. The implication is that if the individual is exposed to the appropriate experiences--the ones somehow missed earlier in the individual's vocational development--the person not only will feel less anxious but will also be able to make a vocational choice.

In contrast, as shown in Figure 2, "indecisiveness" is viewed by Goodstein as being directly related to antecedent anxiety. Since the act

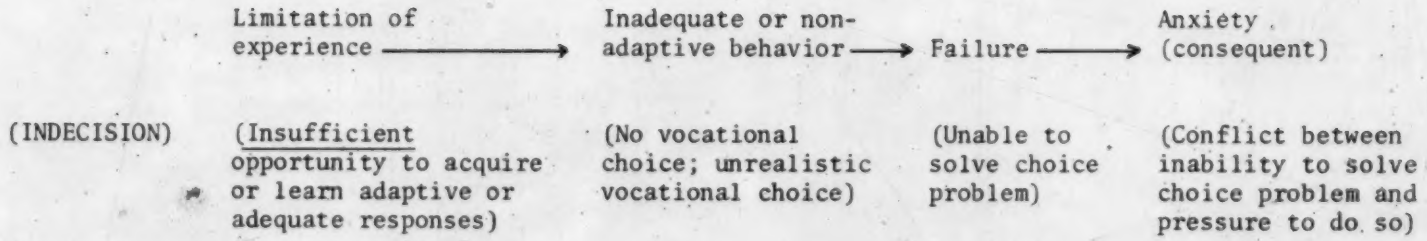
Limitation of experience
Inadequate or non-adaptive behavior
Failure
Anxiety (consequent)
(INDECISION)
(Insufficient opportunity to acquire or learn adaptive or adequate responses)
(No vocational choice; unrealistic vocational choice)
(Unable to solve choice problem)
(Conflict between inability to solve choice problem and pressure to do so)

Figure 1. Conceptual definition of indecision. (After Goodstein, 1965.)

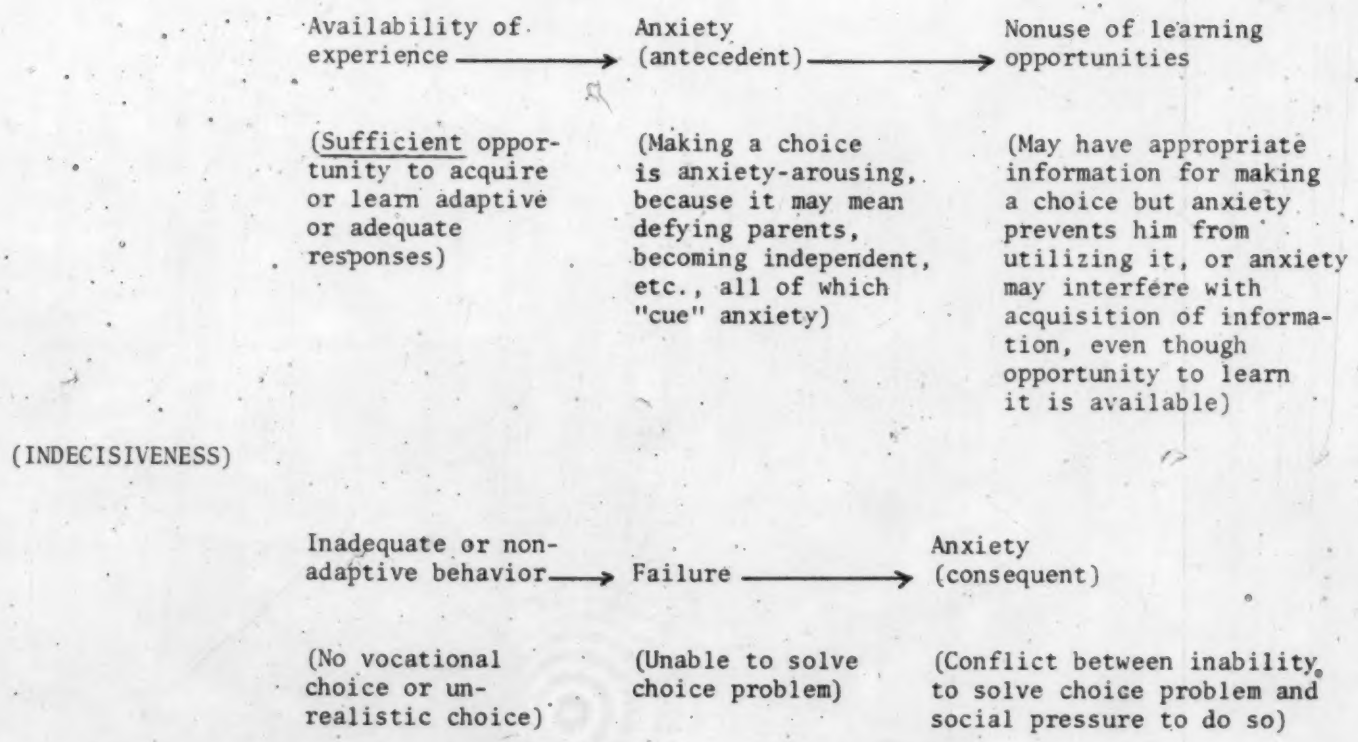
Availability of experience
Anxiety (antecedent)
Nonuse of learning opportunities
(Sufficient opportunity to acquire or learn adaptive or adequate responses)
(Making a choice is anxiety-arousing, because it may mean defying parents, becoming independent, etc., all of which "cue" anxiety)
(May have appropriate information for making a choice but anxiety prevents him from utilizing it, or anxiety may interfere with acquisition of information, even though opportunity to learn it is available)
(INDECISIVENESS)
Inadequate or non-adaptive behavior
Failure
Anxiety (consequent)
(No vocational choice or unrealistic choice)
(Unable to solve choice problem)
(Conflict between inability to solve choice problem and social pressure to do so)

Figure 2. Conceptual definition of indecisiveness. (After Goodstein, 1965.)

of making a decision or commitment is quite anxiety arousing, the individual characterized by indecisiveness avoids making decisions, even though the person has the necessary information and skills or has had opportunities to acquire them. Furthermore, this individual's anxiety tends to be pervasive and through the process of generalization may be associated with other stimulus situations. The implication is that the provision of current opportunities for learning will have little effect upon the individual's ability to make a vocational choice. In fact, these opportunities may increase anxiety because they reactivate the conflicts associated with decision-making.

Operational definitions. From Goodstein's theoretical analyses of indecision and indecisiveness, it is possible to formulate what Underwood (1957) has referred to as "S-R, E/C" operational definitions of these concepts. The paradigm for this type of definition is the comparison of the effect upon behavior of a zero amount of a treatment with that of some finite amount. If there is a reliable difference in behavior between an experimental (finite amount) and a control group (zero amount), then the procedure used to derive the phenomenon also defines it.

As an example of this type of definition, Underwood (1957, p. 69) cites the paradigm for retroactive inhibition. The basic operations may be outlined as follows:

	Task A?	Task B?	Retention of A?
Control	Yes	No	Yes
Experimental	Yes	Yes	Yes

Using an "if-if-then" type of verbal definition, Underwood has explicated this experimental design as follows: "If under one condition only Task A

is given, and if under another Task A is followed by Task B and if the retention of A is better under the first condition than under the second, then we have defined retroactive inhibition (1957, p. 70)."

Applying this paradigm to the definition of indecisiveness versus indecision, Crites (1969) has suggested the design as shown in Figure 3. Here all those subjects who answer "undecided" to a Vocational Choice Inventory (VCI) are randomly assigned to either an experimental group, receiving an "informational experience," or to a control group which receives no treatment. The subjects in both groups are retested on the VCI and classified on the basis of their response. In order to define indecision and indecisiveness from the results of this experiment Crites (1969) specifies two outcomes that must be obtained:

> First, the number of choices in the experimental group must be significantly greater upon retest than in the control group . . . . Second, within the experimental group, there would have to be some Subjects who were able to make a choice upon retest and some who were not. The former would be those who had problems of indecision, but were able to solve them given the appropriate information, whereas the latter would be those with problems of indecisiveness, since they were unable to declare a choice, even though they had the relevant information. (p. 602)

As a guideline for investigating the theoretical basis for Goodstein's distinction between these concepts, the role of anxiety and vocational maturity were compared for these two groups.

In defining indecision and indecisiveness in this way, the assumption has been made that the reason some subjects in the experimental group cannot make a vocational choice, despite their exposure to the "informational experience," is that anxiety produces counteracting effects. Because of the hypothesized interfering effects of anxiety in "indecisive" individuals their level of anxiety would be predicted to be higher than that of "indecision" persons (i.e., those able to make a choice) for whom

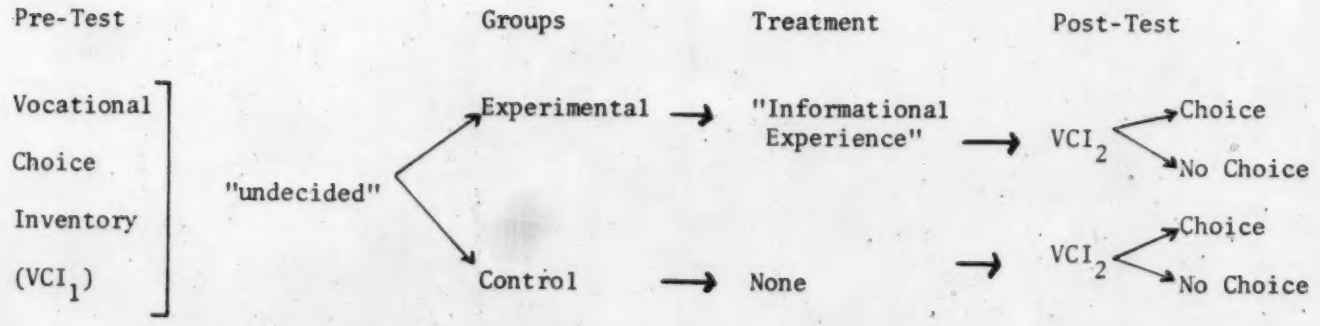

Figure 3. Experimental design for operationally defining indecision and indecisiveness. (Crites, 1969.)

occupational information is believed to serve as an anxiety reducer.

As previously discussed in this chapter, anxiety related to vocational choice may represent a transitory state or a general predisposition to be anxious. There is evidence to suggest that it is theoretically and empirically useful to maintain a distinction between "state" anxiety, or anxiety associated with specific situations, and "trait" anxiety, or a general proneness to be anxious regardless of the situation (Spielberger, 1966; 1971; Johnson, 1968; Johnson and Spielberger, 1968; Spielberger, Gorush & Lushene, 1969). For these reasons both state and trait anxiety measures were obtained by the investigator in this research.

Concerning the level of vocational maturity for these two groups, Crites (1969) has predicted that the level of vocational maturity, as measured by the Attitude Scale of the Career Maturity Inventory (CMI), would be higher for the "indecision" subjects than for the "indecisive" subjects. The rationale for this prediction is based on Goodstein's definitions of indecision and indecisiveness. According to this theory the indecision individual will make a vocational choice when exposed to appropriate vocational experiences in the "informational experience," and consequently become more vocationally mature. In contrast, the indecisive individual will not profit from the same "informational experience" because of interfering anxiety brought about by the necessity of the individual having to make a decision. The implication of this theory is that the effect of anxiety would result in the indecisive individual not being able to improve his ability to make a vocational choice and hence not becoming more vocationally mature.

Need for the Study

Career counselling has always been a high priority area in school

counselling services; however service to students in this area has been floundering in recent years (Ginzberg, 1971).

In the past several years in the U.S.A. the dissatisfaction voiced from educational authorities and the lay public with career counselling in public schools has become so widespread that major government expenditures have been directed to upgrading manpower counsellors. Ginzberg (1971), among others, feels that school counsellors have not done an adequate job of career guidance in the past, and strongly recommends that school counsellors make educational and vocational guidance their primary concern.

In Canada, career counselling has also come under a good deal of criticism. For example the Ontario report entitled Research Study #19 - Guidance (1971) suggests that Ontario schools are not doing the job of career counselling adequately and further advises that guidance services for career planning be provided by agencies outside the school.

Herman (1973) states that career counselling is of highest priority and in greatest demand in schools, however it is not done well. Mott (1973) in a study investigating the secondary school counsellor role in Alberta schools found that school counsellors, teachers, and principals agree that the school counsellor should place a heavy emphasis on career counselling but that this was not generally happening in Alberta schools. Alberta government officials have openly questioned the effectiveness of school counsellors in this area (Foster, 1973; Kolesar, 1973). Paterson (1974) points out that school counsellors have a major responsibility to work with all students to assist them in their career planning and development and counsellors need to place more emphasis in this area.

The Graham Commission in Nova Scotia (1975) questions the position

that schools and school faculty are able to provide vocational guidance and counselling services to students as well as it ought to be provided. This Commission offers the position that vocational guidance and counselling in schools should be the joint responsibility of a manpower training department of the provincial government and of the federal Department of Manpower and Immigration.

The above cited examples suggest that a number of researchers and government officials are calling for improved vocational counselling practices in our schools. The implication is that this job is done badly. Since very little is presently known about the process of vocational choice and problems of career indecision, studies of these processes are needed. The focus of concern in this research was a study of career indecision.

Definitive factors involved in career indecision seem to be difficult to isolate. Lyon (1959) suggests that possible correlates of indecision in career choice appear to be of an affective, personality-oriented nature. One personality characteristic related to career choice which has received little attention in the past is anxiety. This study investigated anxiety in career indecision.

Importance of the Study

A study of anxiety in career indecision is significant because it will add to the existing information about undecided students in their career decision-making activities. If anxiety is not a factor in career indecision, even though Goodstein's theory suggests it is, then one of the possibilities which now exists will have been eliminated. On the other hand, if anxiety is identified as a relevant characteristic of undecided students, this information could foster a better understanding

of why some students experience difficulty in deciding on a career. Furthermore, if the constructs of "indecision" and "indecisiveness" are empirically validated, specific counselling practices in secondary schools will be apparent to deal with students experiencing these difficulties of career decision.

Definition of Terms

The following definitions of concepts are of importance to this study.

The construct of career indecision. According to Goodstein (1965) students experiencing the indecision form of decision difficulty lack the experiences in their vocational development which would allow them the opportunity to acquire the skills and responses necessary for making an appropriate career choice. Anxiety for the student who experiences indecision is a consequence or result of a learning deficit and not an antecedent of it. This anxiety tends to be related to the career choice situation alone and does not take on a general or pervasive quality.

The construct of career indecisiveness. According to Goodstein (1965) the indecisive student cannot make a career choice because making such a decision is in itself strongly anxiety arousing and, as the student perceives it, may involve making dramatic and undesired changes in his life. Anxiety is the antecedent of the student's decision difficulty and not a consequence of it. The student's anxiety tends to be pervasive and through the process of generalization may be associated with other stimulus situations.

Level of career decisiveness. This is the current state of decision regarding a career as reported by the student on the Career Assessment

Form (CAF). The student is requested to rank himself on a continuum ranging from "completely undecided" to "definitely decided."

The concept of vocational maturity. According to Crites (1965) vocational maturity is more comprehensive than vocational choice. Vocational maturity includes not only the selection of an occupation but also attitudes toward decision-making, comprehension and understanding of job requirements, planning activity and development of vocational capabilities. The total score on the 50 item Attitude Test of the Career Maturity Inventory (CMI) is the measure of vocational maturity used in this study.

The concept of state anxiety (A-state). State anxiety is anxiety associated with specific situations. According to Spielberger (1966), A-state is "characterized by subjective, consciously perceived feelings of apprehension and tension, accompanied by or associated with activation or arousal of the autonomic nervous system (p. 17)." The total score on the 20 item state scale on the Self-Evaluation Questionnaire (SEQ-X_1) is the measure of state anxiety used in this study.

The concept of trait anxiety (A-trait). Trait anxiety is a general proneness to be anxious regardless of the situation. A-trait is a personality trait that seems "to imply a motive or acquired behavioral disposition that predisposes an individual to perceive a wide range of objectively nondangerous circumstances as threatening, and to respond to these with A-state reactions disproportionate in intensity to the magnitude of the objective danger (Spielberger, 1966, p. 17)." The total score on the 20 item trait scale on the Self-Evaluation Questionnaire

(SEQ-X_2) is the measure of trait anxiety used in this study.

Statement of the Problem

This study was concerned with the relationship of anxiety to career indecision by secondary school students. Specifically, this study attempted to test the empirical utility of Goodstein's (1965) "indecision" and "indecisive" constructs. This purpose can be described by the general question, "Can high school students who experience difficulties in making a career decision be adequately discriminated by the constructs of indecision and indecisiveness?"

Statement of Hypotheses

In accordance with the experimental design described by Crites (1969) this experiment was divided into two segments. In the first segment an attempt was made to assess the effectiveness of the "informational experience" (Workshop) as a treatment for career undecidedness. It was reasoned that if the "informational experience" was an effective treatment, subjects who experience it should exhibit a significantly greater degree of career decidedness than subjects who did not experience it.

The procedure that was used in the second segment was to divide the experimental subjects into two groups on the basis of their Career Assessment Form scores after they had experienced the workshop treatment. The first group was comprised of those individuals who showed a gain in their degree of career decidedness after being exposed to the workshop treatment. The second group was comprised of those individuals who did not show a gain in their degree of career decidedness after being exposed to the workshop treatment. If Goodstein's theory holds true, then the subjects in the first group would be experiencing indecision and the sub-

jects in the second group would be experiencing indecisiveness. According to Goodstein's theory in using retest scores on the Attitude Scale of the Career Maturity Inventory and the Self-Evaluation Questionnaire as the dependent measures, the following differences can be predicted between the two groups: (a) the indecision group will be significantly more vocationally mature than the indecisive group; (b) the indecision group will exhibit significantly lower levels of state anxiety than the indecisive group; and, (c) the indecision group will exhibit significantly lower levels of trait anxiety than the indecisive group.

These hypotheses are stated as follows:

1. The indecision group will score significantly higher than the indecisive group on the vocational maturity scale.

2. The indecision group will score significantly lower than the indecisive group on the state anxiety scale.

3. The indecision group will score significantly lower than the indecisive group on the trait anxiety scale.

Organization of the Remainder of the Study

An introduction to the topics investigated, purpose of the study and hypotheses to be tested were presented in Chapter I. A review of literature related to the investigation is presented in Chapter II. The procedures used in conducting the research are described in Chapter III. A presentation and analysis of the data is contained in Chapter IV. The summary, conclusions, and recommendations for further research are presented in Chapter V.

CHAPTER II

REVIEW OF RELATED LITERATURE

The purpose of this investigation was to assess the empirical validity of the constructs of "indecision" and "indecisiveness" as they relate to career decision behaviors. The literature reviewed in this chapter is divided into three categories: (a) theoretical explanations of career indecision, (b) research dealing with anxiety in career indecision, and (c) indirect support of the "indecision" and "indecisive" constructs.

Theoretical Explanations

No true theories of indecision in career choice currently exist, but postulates concerning this concept have been formulated by several authorities. This section presents a discussion of postulates which attempt to explain career indecision.

Dysinger (1950) stated that there were two general types of indecision. The first type was a wholesome experience whereby the decision was being postponed or a number of different occupational fields were being considered. The second type was one in which the individual avoided the pain of deciding by taking refuge in indecision. This authority implied that the second situation was unhealthy. Tyler (1961) elaborated on the second type of indecision with the following comments:

> There is one problem that constantly arises in cases where indecision is a prominent feature. Such cases require the basic minimum of diagnosis to decide what sort of treatment the person needs. The trouble is that sometimes indecision with regard to a plan of action represents a general indecisiveness growing out of personal problems . . . . . When a counselor is fairly sure that a client's difficulty in making up his mind is of this nature, it is adviseable that he frankly recommend psychotherapy rather than specific ways of attacking the vocational problem. (p. 201)

Ginzberg, Axelrad, Herma and Ginzberg (1951) described vocationally undecided individuals as "deviants" or "variants" depending upon their individual problem characteristics:

> The behavior of some individuals during the period of decision-making cannot be considered mere variations from the norm, but must be classified as deviations. If one finally succeeds in crystallizing a choice within a few years of the time of the average, it can be considered a variation. But if the individual is unable to crystallize a choice at all, or is able to do so at a much later age than is typical of the group to which he belongs, his case must be considered a deviation. (p. 127)

Variant and deviant patterns become most apparent during late adolescence when the differences between individuals are accentuated by the increasing pressure upon them to act in accordance with their vocational plans. According to Ginzberg et al. (1951), variations may be manifested in (a) the range or number of occupations the individual considers, and (b) the point in time when he makes a firm choice. Also these authors suggest that for some individuals the variation may be attributable to having "too many" options for vocational entry with the consequence that they cannot choose among their many alternatives. This is most characteristic of the bright individual with many interests. Other individuals may have a variant form of career development because they have restricted themselves to a single option and do not consider any other career alternatives. Generally speaking, the person with "too few" options makes a vocational choice early in his vocational development. The person with "too many" options, on the other hand, seems to experience an approach-approach conflict and delays making a vocational choice until long after his peers have made their decisions.

Crites (1969) noted that, "the distinction between a variant choice pattern of late crystallization and a deviant pattern with many of the same characteristics is a fine one (p. 170)." Ginzberg et al. (1951)

list two criteria that make the distinction viable: First, the deviant choice is usually based upon a consideration of a single factor which is predominant at an early age. For example, the person may make a career choice on the basis of his interests without taking his abilities into consideration. Second, a "deviant" individual is often characterized by personality conflicts rather than simply a slowed rate of vocational development. Thus, the "deviant" is characterized by a general state of "indecisiveness" rather than a transitory and specific state of "indecision." Three factors seem to contribute to the individual's state of indecisiveness: (a) he is much more responsive than the average individual to parental and societal aspirations and pressures; (b) he has strong and powerful fantasies about being emulated and prosperous; and (c) he has maintained childhood interests that compete with more appropriate adult concerns (Crites, 1969, p. 171).

Lo Cascio (1964) approached the problem from a behavioral viewpoint. He introduced the concepts of "delayed" and "impaired" vocational development as explanatory constructs and contrasted them with his explanation of the four steps of normal career development. According to Lo Cascio (1964), in the first step of normal career development the individual becomes aware of the vocational tasks which he must accomplish; for example, the acquisition of vocational skills. Second, the individual reacts appropriately in terms of prior learning; e.g., he seeks training. Third, the person learns new responses in the process of coping with the task; e.g., he gets training. Fourth, the individual incorporates newly acquired skills into his behavioral repertoire for the accomplishment of future tasks.

In contrast to the individual who undergoes a normal vocational development, the person who experiences a "delayed" vocational development

does not have a sufficient backlog of vocational task related behaviors to approach the problem of choosing and acting upon a career choice in an appropriate manner. Once this person acquires these experiences, however, he proceeds through a relatively normal career development, though at a delayed pace. In contrast, the person who experiences an "impaired" vocational development has not acquired the task relevant behaviors and cannot incorporate them because he either lacks awareness of the task he is supposed to master, or, if he is made aware of it, he is unable or unwilling to cope with it. Crites (1969) pointed out that, defined in these ways, the concepts of "delayed" and "impaired" development roughly correspond to Ginzberg et al.'s (1951) concepts of "variant" and "deviant" choice patterns respectively.

Another focus to the problem of delayed vocational development or career indecision is that offered by Goodstein (1965, pp. 155-159). Goodstein (1965) also described two factors related to a slowed rate of vocational development. The first factor was termed "indecision." The second factor was termed "indecisiveness." They differ in terms of the role played by anxiety in the individual's problem.

In the first instance, the "indecision" individual:

> . . . has never had sufficient opportunity to acquire or learn adaptive or adequate responses, and his inadequate behavior stems from a limitation of experience. Thus, (he) . . . may be seen as having . . . no vocational plans . . . simply because of the failure of his prior experience to provide adequate opportunities for learning such responses. In such cases the anxiety observed in counseling is regarded as stemming from the failures which have resulted or can result from this lack of skills, skills which the client recognized that others possess but that he does not . . . . Once the anxiety due to not having the skills available is alleviated, the skills can typically be promptly acquired. (p. 156)

In the "indecisive" individual:

> . . . anxiety is regarded as playing a central role in the development of the problem. In this instance, the client's failure to develop or learn the appropriate response is not regarded as resulting from the failure of opportunity but rather from the failure to use the opportunities which were provided because of the interfering effects of anxiety. Thus, the client who is vocationally uncommitted is undecided not simply because of a lack of information either about himself or the world of work but because making a decision or commitment is strongly anxiety arousing. He may have such information but be unable to utilize it, or may not have such information, his anxiety preventing him from taking advantage of opportunities to acquire it. For example, making a vocational decision may involve breaking away from parents or defying them; it may represent an act of independence for which the client is not ready; it may mean a commitment to an academic career for which the client may feel inadequate, and so on. In each of these hypothetical examples the client avoids the anxiety by avoiding making a decision. (pp. 156-157)

Goodstein (1965) also noted that:

> In the case of the vocationally indecisive client, there are strong pressures to symbolically approach the sources of his conflict . . . . It is often this conflict of opposite tendencies, one to avoid the anxiety involved in a decision and the other to yield to the social pressure and decide, that serves as the drive that brings the client to counseling or therapy. (p. 157)

Furthermore, "the counsellor's mere provision of current opportunities for learning the skills is not sufficient in (the) latter instance since the anxiety will still be aroused by the cues in the learning situation (Goodstein, 1965, p. 157)," and learning will not take place.

Types of vocationally undecided individuals. There is a basic concordance in the postulations put forth by Ginzberg et al. (1951), Lo Cascio (1964), and Goodstein (1965). All three theorists seem to agree that there are basically two types of vocationally uncommited individuals. The first individual has been described as "variant" by Ginzberg et al. (1951), developmentally "delayed" by Lo Cascio (1964), and as experiencing "indecision" by Goodstein (1965). As described by these three theorists, this

type of vocationally undecided individual cannot make a career choice because he lacks the appropriate developmental skills and experiences. Furthermore, these theorists all apparently would agree that given the appropriate learning experiences this type of individual can and will make a vocational choice.

The second form of vocationally uncertain individual has been described as "deviant" by Ginzberg et al. (1951), as vocationally "impaired" by Lo Cascio (1964), and as "indecisive" by Goodstein (1965). On the basis of the descriptions offered by all three theorists, it would appear that this latter type of individual is not simply skill deficient but, rather, is plagued by pressing personal conflicts which interfere with his making a vocational choice. Unless the sources of this individual's personal problems are adequately dealt with, this person will not be able to make a vocational choice because of the approach-avoidance nature of the problem.

The relationship between career indecision and emotional problems was corroborated by Galinsky and Fast (1966) with conclusions drawn from case studies of college students with identity problems. These researchers concluded that manifestations of distortions in character development appeared when individuals were faced with the necessity of choosing a vocation; at that time, identity problems took the form of vocational indecision.

The investigators cited above agree that career indecision may be related to certain emotional problems, but to date, research has not been directed toward providing substantiating evidence.

In the absence of a guiding theory of career indecision, past research efforts tended to concentrate on trying to identify characteristics of undecided individuals. Because the anxiety construct is an important variable in Goodstein's (1965) theory of career "indecision" and "indeci-

siveness," the following section presents a discussion of research on anxiety in career indecision.

Anxiety in Career Indecision

A definition. Anxiety has been defined variously in terms of feeling states, stimulus conditions, and physiological states. Perhaps the most simple yet useful definition of anxiety is that given by Spielberger (1971) who stated: "The term 'anxiety' is perhaps most commonly used in contemporary psychology to denote a palpable but transitory emotional state or condition characterized by feelings of tension and apprehension and heightened autonomic nervous system activity (p. 1)."

Spielberger (1971) also indicated that it is important to differentiate between stress, threat, and anxiety. He proposed that, "the terms stress and threat be used to denote different aspects of a temporal sequence of events that results in the evocation of an anxiety state (Spielberger, 1971, p. 8)." Stress refers to the objective stimulus properties of a situation. The stimulus conditions include the natural variations in the environment such as the stress associated with a career choice. Where stress refers to the objective stimulus condition, threat refers to the individual's idiosyncratic perception of a particular situation as potentially physically or psychologically dangerous. The individual's interpretation of a given situation as threatening is based largely upon his personality predispositions and past experiences with similar situations. The term anxiety refers to the complex emotional reactions that are evoked when the individual encounters what is to him a threatening situation.

Stated in terms of career indecision, the stressor may be the social demand to make a career choice. The person is threatened by the demand when he realizes that he must make a choice but cannot (in the case of

the indecision individual) or will not (in the case of the indecisive individual) because he either lacks the skills to do so or fears a loss of support from his family or peer group. Finally, he experiences anxiety when he recognizes the conflicted nature of his situation.

Husek and Alexander (1963) and others (Mandler & Sarason, 1952; Spielberger, 1966; 1971) have attempted to distinguish between the anxiety the individual experiences in general and the anxiety he experiences in a specific situation. Spielberger et al. (1969) refer to the person's constant, predispositional, or general level of anxiety as trait-anxiety (A-trait). Situational anxiety is referred to as state-anxiety (A-state). They distinguish between the two through an analogy which contrasts the concepts of kinetic and potential energy in physics:

> The concepts of state and trait anxiety may be conceived of as analogous, in certain respects, to the concepts of kinetic and potential energy in physics. State anxiety, like kinetic energy, refers to an empirical process or reaction taking place at a particular moment in time at a given level of intensity. Trait anxiety, like potential energy, indicates differences in the strength of a latent disposition to manifest a certain type of reaction. And where potential energy denotes differences between physical objects in the amount of kinetic energy which may be released or triggered by an appropriate force, trait anxiety implies differences between individuals in the disposition to respond to stressful situations with varying amounts of A-state. (p. 2)

According to this viewpoint, those persons who are high in A-trait will have A-state experiences more frequently than low A-trait individuals because they tend to perceive a wider range of situations as threatening. High A-trait individuals are also more likely to respond to stressful situations with increased A-state intensity, especially those situations that involve a threat to their self-esteem. Recent evidence suggest that circumstances in which failure is experienced, or in which the individual's personal adequacy is threatened (e.g., a testing situation)

are particularly threatening to persons with a high anxiety proneness (Spielberger et al., 1969).

Thus it seems important that any investigator who is attempting to measure the relationship between anxiety and a behavioral outcome specify which form of anxiety is being investigated. If, for example, the investigator is concerned with the general level of a person's anxiety over time he would do best to select a measure of trait anxiety. If, on the other hand, the investigator is concerned with specific anxiety producing situations he would probably do best to select a measure of state anxiety. Since the concepts of career "indecision" and "indecisiveness" seem to imply that the individual has a high level of either one or of both forms of anxiety, it would seem wise to use measures of both forms of anxiety in testing their empirical validity.

This strategy appears to be in keeping with the findings of several investigators who suggest that because anxiety seems to be a multifaceted phenomenon several measures should be used in studies of anxiety (Cartwright; Kirtner & Fiske, 1958; Dibner, 1958; Krause, 1961).

Career indecision studies. Most studies which reported data on career indecision and anxiety were experimental investigations of the decision-making process. The experimental works of Hall (1963), Davidshoffer (1970), Schrader (1970), Carney (1972), Sharf (1972), and Kimes (1973) were designed to measure the effect of anxiety in relation to career decision situations.

Hall (1963) studied the inter-relationships among manifest anxiety, vocational choice certainty, and choice behavior of 80 male college students. These subjects indicated the status of their career decision

and the degree of certainty about that decision. Three degrees of certainty were used: very certain, fairly certain, and not at all certain. Among the decided students, no differences in anxiety levels were found between the three certainty categories. Although the differences were not significant, Hall (1963) found that more high-anxious undecided students tended to be not at all certain than did low-anxious undecided students. Hall (1963) concluded that the results suggested a possible relationship between general anxiety level and career indecision.

Experimental studies by Davidshoffer (1970) and Sharf (1972) dealt with the effect of anxiety level on choice behavior in career decision-making tasks. Davidshoffer (1970) found that high-anxious college students did not differ significantly from low-anxious college students in response time on career decision tasks. Sharf (1972) hypothesized that high-anxious subjects would respond slower to competing response tasks and faster to non-competing response tasks than would low-anxious subjects. Data from 76 male college students indicated that anxiety level had no significant effect on the time required on the decision task. Both of these studies used high and low anxious subjects, but the subjects were not asked to indicate whether they were decided or were undecided on a career. It is possible that decided and undecided individuals might have viewed the experiment in a different manner.

Lyon (1959) reported a significant difference on anxiety measures between decided and undecided freshman college males. The undecided students scored significantly higher on the measures of anxiety. Wade and Shertzer (1970) indicated that situational anxiety could be reduced through counselling with individuals. Situational anxiety of college

students with vocational problems was lower after counselling than before.

Schrader's (1970) experimental study of the career decision-making process of undecided college freshman males failed to provide an operational definition of indecisiveness within the category of undecided. The study attempted to distinguish the career indecision status of an experimental group which had been given career information with a control group which received no information. Schrader (1970) hypothesized that Taylor Manifest Anxiety Scale (TMAS) scores would be lower after the students had made a career decision than it was when they were undecided. All of the 60 males were initially undecided and Schrader (1970) established as the criterion for defining indecisiveness a significant increase in the number of students in the experimental group who had decided on careers within five weeks after the information giving session. The increase would be significant if the number of students in the experimental group who had decided on careers was significantly higher than the number of students in the control group who had decided on careers. A third group was used to control experimenter bias. An operational definition of indecisiveness was not possible because the number of students from all three groups who had decided on careers after five weeks was too small to test for significance. This also made it impossible to determine any relationship between TMAS scores and career indecision as the number of decided students after the experiment was too small for statistical comparison. Schrader (1970) suggested that the study might have been more informative if the decision statement had been dimensionalized to account for a change in degree of the decision status.

Carney (1972) conducted a study in which he failed to demonstrate the effectiveness of a Career Planning Workshop as a treatment for career

indecision. Carney (1972) concluded that the methodology of his study was limited in several ways. First, the sample of 27 students was drawn from a disadvantaged high school and college population which was likely not representative of the broader population of vocationally undecided individuals. The sample cut across a variety of age and grade levels ranging from 16 years of age to 20 years of age and from high school freshmen to college sophomores. Current research (Crites, 1969; 1971; Spielberger, 1971) indicates that individuals vary considerably in their degrees of career decidedness, vocational maturity, and state and trait-anxiety at different age and grade levels. This evidence suggests that the Career Planning Workshop experience may not have been developmentally timely for a substantial portion of the subjects. In addition, the Career Planning Workshop in its original form was created to serve a college freshman population. Although the workshop was modified to include high school and non-college occupations, the subjects still may not have seen it as being relevant to their goals, needs, and concerns. The Career Planning Workshop used in this study was of a "one-shot" nature. Given the developmental nature of career choice, a more appropriate and effective format may be one of a series of workshops conducted over a more protracted period of time.

Kimes (1973) investigated trait anxiety in relation to career decisiveness in a sample of 829 college students. He found that students of different levels of career decisiveness differed significantly in mean trait anxiety scores. Students who were completely undecided about a career and those who had a career in mind, but were not moving toward a decision were significantly more anxiety prone than students who had definitely decided on a career. Differences in trait anxiety scores

among students who were tentatively decided, those who were moving toward a decision, and those who were definitely decided were not significant. Kimes' (1973) study did not attempt to investigate trait anxiety as an antecedent to or as a consequence of career indecision. Since this research clearly identified significant differences in anxiety proneness among levels of career decisiveness, it could by hypothesized that high trait anxiety interferes with the individual's career decision-making ability. Kimes (1973) recommended further research to: (a) explore the possibility of high trait anxiety as being an antecedent to career indecision, and (b) test the hypothesis that high trait anxiety was the consequence of career indecision rather than the cause of career indecision.

Evidence from Schrader (1970), Carney (1972), Kimes (1973) and other studies discussed in this section indicated a need and provide some direction for a further investigation of career indecision.

Crites (personal communication, 1974) and Goodstein (personal communication, 1974) state that the Goodstein-Crites paradigm to establish the empirical validity of the indecision-indecisive constructs has not, to their knowledge, been investigated.

To this researcher's knowledge, the empirical validity of the "indecision" and "indecisive" constructs has not been determined, however, indirect evidence of their validity is available. The next section presents this indirect evidence.

Indirect Support

It should be apparent from the foregoing review that society and circumstances often conspire to make the career decision process a very

anxious experience for many individuals.

Kroll, Dinklage, Lee and Wilson (1970) list three ways that individuals use in responding to such stressful events:

1. The adaptive response style: the individual engages effectively with the stressful event insofar as he (a) manages anxiety effectively, and (b) possesses and uses both cognitive skills and a capacity for autonomous action.

2. The quiescent response style: the individual manages a current level of anxiety effectively but fails to use cognitive skills and/or a capacity for autonomous action to engage with the stressful event, either because such activity would cause an unmanageable increase in the level of anxiety, or, because he does not possess one or both of these skills.

3. The maladaptive response style: the individual manages anxiety by disengaging himself from the problem and by maintaining distance from it, which presents the use of whatever cognitive skills and capacity for autonomous action he may possess. (p. 186)

In terms of the postulations offered by Goodstein (1965), the "adaptive response style" of Kroll et al. (1970) corresponds to the actions taken by the person who does not experience career indecision. The "quiescent response style" corresponds to both "indecisive" and "indecision" forms of career development problems while the "maladaptive response style" shows a strong agreement with the "indecision" form of career decision problem only.

It would seem that the vocationally uncommitted individual can delay but cannot avoid eventually making a career choice of some kind. Where the individual is able to master the necessary skills and training for making an appropriate career decision, one would, according to Goodstein's (1965) theory, anticipate that the person would be significantly less anxious after making his career decision. Where the individual is not able (as he sees it) to make a decision on his own but, rather, has a

choice made for him by some external event or circumstance, one would anticipate that the individual's anxiety would not be reduced despite the choice.

One would also predict that those individuals who are able to master the vocationally related tasks would also be more prepared to enter the labor market and be more likely to experience occupational success. A study by Hart, Ratner and Christensen (1971) supports this notion. These investigators compared the vocational planning and preparation activities of men at professional, skilled and semiskilled occupational levels. Their results indicated that the degree of planning and preparation the person undertook prior to entering the occupational market strongly correlated with his ranking on the professional to semiskilled continuum. The professional people had made a vocational choice while they were young and had acquired the appropriate educational preparation for pursuing it. The semiskilled individuals were less inclined to engage in early planning and preparation and tended to see themselves as lacking control over their occupational futures. In a related study, Christensen (1970) sampled a group of individuals who had stated a career goal and prepared for it while they were young and a group who had not prepared for a specific vocational goal. The planning and preparation group tended to have a more stable career pattern than the unplanned and unprepared group. Also, those individuals who had not planned for a career were rated as being more affected by feelings, less emotionally stable, more frustrated and overwrought, and more anxious than those who had a pre-planned career goal.

The evidence presented in this section suggests that those individuals who prepare for occupational entry tend to be less anxious and more

self-directed than those who do not prepare to enter the labor force.

This evidence is also indirectly supportive of the "indecision" and "indecisive" constructs. As elaborated by Goodstein (1965), both constructs suggest that anxiety plays a critical role in career indecision. Accordingly, anxiety can be the consequence of career indecision or a precursor to it. In either case, the anxiety will not be reduced unless the individual engages in those forms of behavior which are appropriate for its reduction. For the person experiencing career indecision an appropriate set of behaviors would include learning how to make a good career decision and acting upon it. For the indecisive individual an appropriate course of action would be to deal with the conflict that creates anxiety and prevents the person from making a career decision.

Summary

A discussion of literature related to theoretical explanations of career indecision, anxiety in career indecision, and some indirect evidence of the validity of the "indecision" and "indecisive" constructs was presented in this chapter. From an analysis of the studies reviewed, a need for further investigation of career indecision emerged.

The procedures, sample, instruments, research design, statistics and analysis of data collected to study the "indecision" and "indecisive" constructs are described in Chapter III.

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

A detailed description of the experimental design and procedures used in the investigation of the "indecision" and "indecisive" constructs is presented in this chapter.

Experimental Design

A modification of the experimental design presented earlier (see Figure 3) was used in conducting this study. This design is summarized in Figure 4.

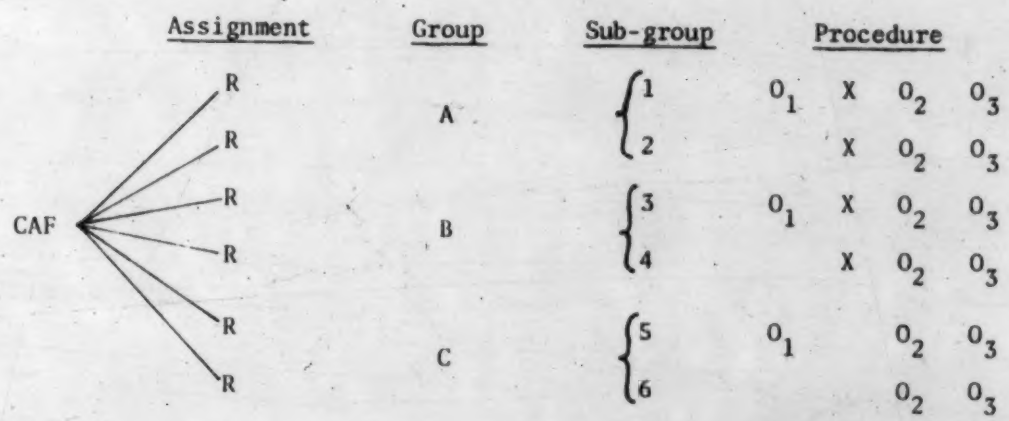

Figure 4. Summary of the design used in this study to test the validity of the indecision and indecisiveness constructs.

Note: CAF = Career Assessment Form
R = Random Assignment
O = Test observations
(O_1 = pretest; O_2 = first post test; O_3 = second post test follow-up)
X = Workshop Treatment (informational experience)

In the design shown in Figure 4, a group of subjects were administered the Career Assessment Form (CAF) to elicit their choice of an occupation. Those subjects who stated they were either "completely

undecided," "hazy in their understanding," or "had tentative thoughts about some possibilities," were randomly assigned to one of three groups: two treatment groups (groups A and B in Figure 4) and one control group (group C in Figure 4). Half of the subjects in each of the three groups were tested with measures of vocational maturity and anxiety (sub groups 1, 3, and 5 in Figure 4) prior to the provision of any treatment. This procedure controls for the "reactive effects" of the pre-testings on the dependent variable (i.e., choice or lack of choice) as it is conceivable that the pre-testing can facilitate the subjects' making vocational choices (Crites, 1969).

Both treatment groups were then exposed to different forms of an "informational experience," while the control group received no treatment. Finally subjects in all three groups were retested with the vocational choice inventory and vocational maturity and anxiety questionnaires.

Subjects in both treatment groups were then classified according to whether they improved their positions on the vocational choice inventory or not and on this basis were placed into two groups. Those subjects who did not improve their position on the vocational maturity scale were placed in one group and those who did improve their position on this scale were placed in a second group.

If Goodstein's (1965) indecision and indecisive constructs possess empirical validity, the following retest relationships should be observed between the two groups (Crites, 1969). Indecision subjects, or those subjects who were initially anxious because they had not made a career choice, should be less anxious when they make a career choice. In addition, as defined by an increase in their scores on the vocational maturity scale, they should show a substantial increase in their level of

vocational maturity. Indecisive subjects, or those subjects who could not make a vocational choice because of interfering anxiety, should be more anxious following exposure to the "informational experience." Their level of vocational maturity should remain constant and they should not, by definition, make a vocational choice.

Instruments

The instruments that were used in this study were the Career Assessment Form (CAF), the Attitude Scale of the Career Maturity Inventory (CMI), and the Self-Evaluation Questionnaire (SEQ). Complete copies of these instruments may be found in Appendix K, page 111.

Career Assessment Form

The continuum on the Career Assessment Form (CAF) was taken from Goodson's (1970) "Student Information Sheet" which required that the respondent rank himself on a continuum ranging from "no career choice," to "tentative career choice," to "final career choice."

Goodson's rationale for developing this type of questionnaire item was based upon recent trends in career development theory. Many theories of vocational choice--particularly those of the developmental and decision-making orientation (e.g., Tiedeman, 1961; Hershenson, 1968; Ivey & Morrill, 1968; Kroll, Dinklage, Lee & Wilson, 1970; Morrill & Forrest, 1970)--stress the process quality of career decisions. In this viewpoint, career commitments are described as covering a range on a vocational decision continuum from "no commitment," to "tentative commitment," to "final commitment." Accordingly, it is proposed by the investigator of this study that research on the career decision process must take into account this range of commitment possibilities. It should also be noted that this

type of questionnaire item avoids the possibility of "false positive" and "false negative" answers (e.g., saying "yes" or "no" but meaning "tentatively decided") associated with either-or, yes or no questions (Carney, 1972).

Scores on the items of the CAF are derived on a 1 to 5 basis with 1 representing "undecided" about a career and 5 representing "decided" on a career. Goodson (1970) reported a mean score of 2.74 for vocationally undecided college students at Brigham Young University. The group mean score after several forms of treatment had increased to 3.62.

While there is not a lot of empirical data to support this instrument, the investigator of this study was convinced that the CAF instrument would do the job required (i.e., identify the position of a subject on a vocational decision continuum). Goodson (1970), Carney (1972), and the earlier use of this instrument for the same purpose by the investigator in the pilot study (see page 49) conducted prior to this research support the above contention. For these reasons the Career Assessment Form was used in this study.

Career Maturity Inventory (Attitude Scale)

The Attitude Scale of the Career Maturity Inventory (CMI), form A-1 was developed by Crites (1973) to elicit ". . . the feelings, the subjective reactions, the dispositions that the individual has toward making a career choice and entering the world of work (Crites, 1973, p. 3)."

The Attitude Scale of the CMI more closely approximates a survey questionnaire than an actual test (Crites, 1973). The Attitude Scale consists of 50 True-False items. With the exception of six items (2, 22, 38, 42, 45, and 47) for which the correct response is "true," the correct

response is "false." Stated in another way, the profile for the "vocationally mature" individual would include 44 items marked "false" and six items marked "true". To support this rationale, Crites (1965) cited evidence to indicate that the higher the subjects grade level, the more they are inclined to answer "false" to the items with the exception of the six items listed above. Conversely, the lower the subjects grade level, the more they are inclined to answer "true." This rationale assumes that the more educational and life experiences an individual has, the more vocationally mature he is likely to be.

Crites (1973) discussed the reliability of the Attitude Scale and reported a correlation coefficient of .71 for 1648 subjects in grades 6 through 12 tested and retested over a one-year interval. Although this is not an indication of extremely high stability, Crites noted that an extremely high stability coefficient would not be consistent with the theoretical proposition that vocational behavior matures over time.

Item data from Grades 6 through 12 were analyzed and internal consistency estimates (Kuder-Richardson Formula 20) were calculated. Internal consistency coefficients ranged from .65 to .84 with a mean of .74. On the average (.74), the coefficients are comparable to those of other instruments similar to the Attitude Scale (Super and Crites, 1962).

Hall (1962) conducted a study to determine the agreement between the empirical scoring key for the Attitude Scale and a "rationally" derived one. Ten expert judges (five male and five female counselling psychologists) were asked to indicate which they considered to be the more mature response to each attitude item. The percentage of agreement was 74 per cent thus providing some evidence that the Attitude Scale would appear to have acceptable content validity.

The Attitude Scale has also been related to several criterion variables in a number of studies. Bathory (1967) acquired r's of 0.39 ($p < 0.01$) and 0.31 respectively when the Attitude Scale was correlated with Miller and Haller's (1964) "Occupational Aspiration Scale." Carek (1965) studied the relationship of decisiveness in career choice to the Attitude Scale in a group of 346 male college students. He reported a biserial r of 0.25. Cooter (1966) obtained an r of 0.38 ($p < 0.01$) between career attitude maturity and Gribbons and Lohnes' (1968) "Readiness for Vocational Planning" scales. These studies generally indicate that the Attitude Scale has demonstrated criterion-related validity.

Crites (1973) cites numerous studies providing evidence in support of construct validity for the Attitude Scale (Carek, 1965; Sharf, 1968; Miller, 1968; Asbury, 1967; Bovee, 1967).

Crites (1973) makes the following statement:

> The Attitude Scale can be used . . . with the confidence that it is reliable and valid for the measurement of career attitude maturity. (Crites, 1973, p. 32)

Self-Evaluation Questionnaire

The Self-Evaluation Questionnaire (SEQ) is a measure of state and trait anxiety developed by Spielberger, Gosuch and Lushene (1969). The SEQ(X_2) trait scale consists of 20 statements that ask the respondent to describe how he generally feels. The SEQ(X_1) state scale also consists of 20 statements but the instructions require the respondent to indicate how he feels at a particular moment in time. The scales are printed on opposite sides of a single test form.

Since the SEQ(X_1) is sensitive to the conditions of administration, Spielberger *et al.* (1969) recommend that it be administered prior to the

administration of the SEQ(X_2). This procedure was followed in this study.

The range of possible scores on the SEQ(X_1) varies from a minimum score of 70 to a maximum score of 130 on each of the subscales when the constant of 50 is added. The appropriate constant for the SEQ(X_2) is 35. Thus, the range of possible scores on the SEQ(X_2) is from 55 minimum to 115 maximum. Subjects respond to each item by rating themselves on a four-point scale. The four categories for the SEQ(X_1) scale are: (a) not at all, (b) somewhat, (c) moderately so, and (d) very much so. The categories for the SEQ(X_2) scale are: (a) almost never, (b) sometimes, (c) often, and (d) almost always.

Some of the items are worded in such a manner that a rating of "4" indicates a high level of anxiety while other items are worded so that a rating of "4" indicates a low level of anxiety. A scoring procedure has been worked out to account for these differences by simply reversing the scores for those items on which a high score indicates a low level of anxiety (i.e., converting a "4" to a "1").

To reduce the potential influence of acquiesence or "response set" the SEQ(X_1) scale has ten items which are directly scored (i.e., low to high anxiety) and ten reversed items (i.e., high to low anxiety). The SEQ(X_2) scale has 13 items that are scored directly and 7 items that are reversed.

Five of the items on the SEQ are used in both scales; three are worded exactly the same on each scale and two contain the same key terms. The remaining 15 items on each scale are sufficiently different in content and/or connotation to be regarded as independent items (Spielberger et al., 1969).

Test-retest correlations for the SEQ(X_2) are somewhat high with the

reported r's ranging from 0.73 to 0.86 for periods up to 104 days. As would be expected with an instrument that is sensitive to transitory changes in affect states, the SEQ(X_1) has a reported median Pearson test-retest r of 0.32. When measured in terms of internal consistency, however, the K-R 20 coefficient ranges from 0.83 to 0.92 for the SEQ(X_1) (Spielberger et al., 1970, p. 10).

The SEQ(X_2) scale has shown a correlation of 0.75 with the Institute for Personality and Ability Testing Anxiety Scale (IPAT) and a correlation of 0.80 with Taylor's Manifest Anxiety Scale (Spielberger et al., 1970, p. 10). Both the IPAT and TMAS are purported to measure trait anxiety (Spielberger et al., 1969).

The evidence to indicate the SEQ(X_1) is sensitive to brief or transitory anxiety states has been summarized by Spielberger et al. (1969). In one study, subjects were administered the SEQ(X_1) in a single testing session under four different conditions. The first administration occurred at the beginning of the testing sessions (Normal Condition). The second administration of the scale followed a 10-minute period of relaxation training (Relax Condition). The third administration followed a 10-minute period in which the subjects worked on problems on the Terman Concept Mastery test which was described to subjects as a "relatively easy I.Q. test" (Exam Condition). The final administration of the scale followed immediately after the subjects viewed a stressful movie (Movie Condition) depicting several accidents in a woodworking shop.

The mean score for the SEQ(X_1) was lowest in the Relax Condition and highest after the subjects viewed the stressful film. In the Normal and Exam conditions, the scores were approximately the same for males and females, indicating that these conditions had a similar impact on both

sexes. The Movie Condition was particularly upsetting for the females whereas the Relax Condition seemed most effective in reducing their emotional intensity. This evidence suggests that the SEQ(X_1) is a sensitive measure of anxiety occurring under differing stimulus conditions and also implies that females are more emotionally labile than males and/or that they are more willing to report their feelings.

Methodology

Preliminary Arrangements

Prior to the start of the investigation the Directors of Research and of Guidance and Counselling from the Edmonton Public School system were contacted to obtain permission to do research within this school system. Approval was granted and arrangements were made for the investigator to meet with the school administrators of M. E. LaZerte Composite High School. Discussions were held with these school personnel and strategies were developed to conduct the research. Letters were sent to students involved in the study and their parents to briefly set out the purpose of the study and the times and dates of various activities. Copies of these letters are found in Appendix A, page 84.

The Edmonton Public School system is a large urban school system comprising 150 schools serving a student population of approximately 71,500 students with a staff of 6,000 employees (3,800 teachers and 2,200 support staff).

M. E. LaZerte Composite High School is one of 12 high schools in the Edmonton Public School system. This school was opened in 1970 and is one of four vocational schools in the system. A wide range of course offerings covering academic, business education and vocational areas are

provided for the school enrolment of approximately 1,450 students. The student body is served by 80 teaching, administrative, and counselling and support staff.

Five doctoral students in counselling from The University of Alberta were hired to assist the investigator in data collection and treatment activities. All of these people possessed professional counselling experience ranging from 1 to 6 years and all, but one, possessed prior teaching experience ranging from 2 to 17 years. Three students were in the 25-30 year age range; one in the 30-35 year age range; and one in the 35-40 year age range. The investigator held three training sessions of approximately one hour each involving all hired counsellors for the purpose of ensuring that these counsellors were totally familiar with the tasks for which they were hired.

In addition, three resource people from provincial government and local post secondary educational institutions volunteered their services to assist with the treatment activities. These resource people conducted the group session activities comprising the workshops for each of the two treatment groups. The Acting Supervisor of Counselling and Guidance for Alberta Education, a vocational counsellor from the Alberta Vocational Centre in Edmonton, and the high school liaison assistant at the University of Alberta in Edmonton constitute the three resource people. These people are referred to later in this chapter as each group session activity for each workshop is discussed.

Subjects

The subjects for this study were drawn from students registered in the grade eleven social science courses (Social Studies 20, Geography 20,

and Psychology 20) at M. E. LaZerte Composite High School in Edmonton, Alberta. This procedure was done to ensure that a representative sample of grade eleven high school students would be obtained for the investigation, since all grade eleven students in the school would be registered in one of these social science courses. The procedure also ensured a common release time for students who would later become more involved in the investigation since the social science courses were all offered at the same time of day. It should also be noted that a relatively small number of the population of grade twelve students (approximately 6 per cent) could also enrol in one of these three grade eleven social science courses.

Selection of the Sample

All students enrolled in each of the three grade eleven social science courses were administered the Career Assessment Form (CAF) to elicit their level of career decidedness. One of the hired counsellors performed this task. At the same time, this counsellor provided students with some information about the proposed study. Details are provided in Appendix B, page 88.

The total number of "undecided" students identified by this process were used as subjects in this study. Students who were "undecided" were arbitrarily defined by the investigator as those students who placed themselves in one of the last three categories on the CAF form, i.e., "completely undecided," "a hazy understanding," or "tentatively considering some possibilities." A description of students identified as "undecided" are presented in Table 1.

Table 1

Age, Sex and Grade Level of "Vocationally Undecided" Students

Grade	Age			
	15	16	17	18
Grade 11 males	2	31	17	1
Grade 11 females	3	35	17	1
Grade 12 males			4	1
Grade 12 females			3	5

Of the 120 subjects used in this study, 64 were female and 56 were male. Thirteen were grade twelve students and the remaining 107 were grade eleven students. The subjects ranged in age from 15 to 18 years with their median age being 16 and a half years.

The pool of "undecided" students was randomly assigned to one of three groups: a control group and two treatment groups. A description of subjects in each of these groups is contained in Appendix C, page 90.

The Treatment Groups

There were two treatment groups, each consisting of 40 subjects, in this study. Each group was subjected to a Career Information Workshop. The purposes of each workshop were similar, however the activities comprising each were different. The purposes of each workshop were:

1. To increase participants' awareness of the career development process.

2. To motivate participants' thinking about their personal characteristics and how such characteristics influence career decisions.

3. To increase participants' awareness of behavior and activities that will facilitate successful career development.

4. To provide useful information to participants to aid them in their decision-making.

5. To increase participants' knowledge of career information resources available to them in their community.

Career Information Workshop One (CIW One)

This workshop was given to subjects in experimental group one. Three activities were used to implement the five goals established for the workshop. The activities that subjects in treatment group one were involved in are described in the following pages.

Activity one. A group session was provided by The Alberta Department of Education Acting Supervisor of Counselling and Guidance. Subjects were presented with a Career Decision-Making film by John Krumboltz and Don Sorenson. This 27 minute film is built around eight steps in decision-making identified by Krumboltz. These are: (a) formulating the problem and goals, (b) committing yourself to spending enough time to the process, (c) generating alternatives to attain the goal, (d) collecting information about these alternatives, (e) estimating the consequences of each of the alternatives, (f) re-evaluating what you have learned to this point, (g) making a tentative decision, and (h) recycling.

Using this decision-making paradigm, the film portrays a small group of students as they progress through each of these eight steps. Discussions followed and subjects were given a take-home assignment designed to help them summarize data that they should consider in making a career choice. (See Appendix D, page 93 for a copy of this assignment.)

Activity two. Subjects were introduced to the Self-Directed Search (SDS) prepared by John Holland (1972). The SDS includes two booklets, an assessment booklet and an occupational classification booklet. Subjects filled out the assessment booklet and obtained a three-letter occupational code. The code is used to locate suitable occupations in the occupational classification booklet named The Occupations Finder. The SDS is designed to provide a vocational counselling experience for subjects by simulating what the subject and a counsellor might do in several interviews. Subjects completed the SDS within a range of 50 to 65 minutes. A copy of the SDS is contained in Appendix K, page 111. The investigator checked through each subject's SDS to insure that self-scoring of this instrument was accurate.

Activity three. Subjects were interviewed by one of six interviewers (either the investigator or one of the five hired counsellors) for a period ranging from 25 to 40 minutes. The counsellor started the counselling session by saying "You've just done the SDS the other day. I have it here. Could we check it through together?" The objectives of the interview were to:

1. Assist the subject in clearing up any difficulties he or she may have had while completing the SDS.
2. Relate the subject's Summary Code to occupations in the Occupations Finder.
3. Discuss the entry requirements (including educational) of these occupations.

The CIW One experience was held over a two week period involving three sessions (activities one, two, and three) for a total of approximately 3 hours. The first two sessions comprised activities involving all subjects in a group setting. The third session comprised individual

counselling interviews for each subject.

Career Information Workshop Two (CIW Two)

Subjects from the experimental two group also received an informational experience which comprised the following three activities:

Activity one. Subjects viewed a 25 minute video-tape dealing with the process of career planning. A resource person, a vocational counsellor from the Alberta Vocational Centre in Edmonton, directed the group. This Centre offers unique educational opportunities to adults who, because of limited educational and vocational skills, find themselves at a disadvantage in obtaining and holding suitable employment. The Centre serves more than 1,000 students a year in programs of general education and vocational skill development.

Subjects discussed the video-tape with the resource person and discussed a variety of sources of educational and occupational information available to them which included:

1. A guide for the job hunter booklet prepared by the Federal Department of Manpower and Immigration.
2. The Career Outlook (University and Community College) series of booklets prepared by Manpower and Immigration.
3. Prerequisites to Post-Secondary Educational Opportunities, 1974-75 prepared by the Alberta Departments of Education and Advanced Education.

Activity two. A resource person, the liaison assistant of the University of Alberta, directed this group session. The liaison assistant is a resource person to Alberta secondary schools in terms of assisting secondary school students and staffs in developing their understanding of facets of the University of Alberta. A slide and tape presentation

depicting life at the university was presented. A discussion followed with the resource person expanding the discussion to include opportunities available to students throughout the entire range of post secondary educational institutions.

Activity three. Subjects were interviewed by one of the six interviewers for a period ranging from 25 to 40 minutes. The counsellor started the counselling session by saying "You've had a couple of group sessions during the past week and a half. One session focused on career planning and information sources available to you. The other session focused more on planning for university, technical school or some other form of training and/or education after high school. How are you coming along in your own plans for a career? Could we talk about this?" The objectives for this interview were:

1. To have the student focus on his or her own career planning situation.
2. To motivate the student to consider what can be done to improve the person's own situation.

The CIW Two was held over the same two week period as the CIW One and consisted of three sessions (activities one, two and three) for approximately 3 hours. The first two activities were group sessions and the third activity comprised an individual counselling session for each subject.

Activity three from each of the two workshops was audio-recorded. A counsellor educator, a doctoral student in counselling, and a lay person reviewed the audio-tapes to ensure that the hired counsellors stayed within the prescribed framework for these interviews. The percentage of rater agreement was 89 percent. The results of this assessment are found

in Appendix E, page 95.

Subjects in both experimental one and experimental two groups were asked to rate each of the three activities that comprised their particular "workshop treatment" on a five point scale (see Appendix F, page 98). These ratings were obtained by the investigator as additional data on the effectiveness of the "workshop treatments". An analysis of these ratings is presented in Appendix I, page 105. The results of these ratings are discussed in Chapter V.

Data Collection

As previously mentioned in this chapter, half of the subjects in the control and experimental groups completed the vocational maturity and anxiety scales prior to the start of the "informational experience" treatments (CIW One and Two).

At the end of the experimental period all subjects in each of the three groups were tested on the vocational maturity and anxiety scales. A second posttesting, occurring one month later, was conducted to assess the degree to which experimental results were maintained over time.

The following table illustrates the testing procedures.

TABLE 2

Testing Sequence Used in this Investigation

Group	Start of Experimental Period	End of Experimental Period	One Month Later
1 (Experimental)	CAF	CAF, CMI, SEQ	CAF, CMI, SEQ
2 (Experimental)	CAF, CMI, SEQ	CAF, CMI, SEQ	CAF, CMI, SEQ
3 (Experimental)	CAF, CMI, SEQ	CAF, CMI, SEQ	CAF, CMI, SEQ
4 (Experimental)	CAF	CAF, CMI, SEQ	CAF, CMI, SEQ
5 (Control)	CAF, CMI, SEQ	CAF, CMI, SEQ	CAF
6 (Control)	CAF	CAF, CMI, SEQ	CAF

To conclude the first posttesting period, subjects in the experimental one group and experimental two group completed two additional activities.

Firstly, subjects from each group were asked to rate each of the three activities that comprised their experimental treatment on a 5-point scale. The results of these ratings are discussed in Chapter IV.

Secondly, subjects from each group were asked to provide a rating on a 5-point scale of their degree of career decidedness prior to and after receiving the experimental treatment. The results of these ratings are discussed in Chapter IV. Copies of both 5-point scales are contained in Appendix F, page 98.

Analyses of Data

The statistical analyses of the data is presented in two sections.

The first set of analyses were conducted to assess the effectiveness of the Career Information Workshops as treatments for career indecision. A two way analysis of variance with repeated measures on one factor was used to assess the effectiveness of each workshop treatment. Scheffé (1953) tests were used to determine which mean differed significantly from the others.

The second set of analyses were designed to test the empirical validity of the "indecision" and "indecisive" constructs. Groups, thought to be either "indecision" or "indecisive" within Goodstein's (1965) framework, were investigated using "t" tests of differences between means on vocational maturity and anxiety dimensions.

The critical region for all tests of statistical significance was the 0.05 level. A presentation and analysis of the data is presented in Chapter IV.

The Pilot Study

A pilot study was conducted by the investigator during the early months of 1975 in a high school in Edmonton.

The study was conducted in two parts. The subjects for part one consisted of 53 vocationally undecided Grade 12 students (25 girls and 28 boys) with a mean age of 17 years. The objective was to test the effectiveness of a Career Information Workshop (CIW) as a treatment for vocational undecidedness. A pretest-posttest control design was used and the data were submitted to a two-way analysis of variance. The results confirmed the effectiveness of the CIW.

Subjects who had experienced the CIW (14 girls and 12 boys) were used for part two of the study. Subjects were assigned to groups on the

basis of whether they did or did not show an increase in their degree of vocational decidedness after experiencing the CIW. Data analysis by "t" tests supported the hypotheses by revealing that the indecision group was significantly more vocationally mature and exhibited significantly lower levels of trait anxiety than the indecisive group. Details of the pilot study are provided in Appendix G, page 100.

CHAPTER IV

ANALYSES OF THE DATA

A description of the analyses of data collected in the investigation and the testing of experimental hypotheses is presented in this chapter.

A Control Check

Rationale and Hypothesis

The vocational behavior of subjects in an experiment may be affected and altered simply by virture of the subjects being interviewed or tested or subjected to whatever treatment is used. In other words, the measures of changes in vocational behavior may be what Campbell (1957) terms reactive in that the procedures "modify the phenomenon under study, which changes the very thing that one is trying to measure (p. 299)."

To assess the possible effects of such reactive measures, the following procedure was used. Half of the subjects in each of the three groups were tested with the CMI and SEQ scales before the experimental treatments were provided. All subjects in each of the three groups were then tested with these scales after the experimental treatments were provided.

The posttest CMI and SEQ scores were treated with a simple 2 x 2 analysis of variance design as outlined by Campbell and Stanley (1967, p. 25).

The hypothesis to be tested stated: "There are no significant differences between those subjects who were pretested and those who were not pretested on the basis of posttest CMI and SEQ scores." A "t" test of differences between means on the CMI and SEQ posttest data for the three groups was performed in testing this hypothesis.

TABLE 3

Results of a "t" Test of Differences Between the Pretested and Non-pretested Groups on the SEQ(X_1) Retest

Group	N	$\overline{X}$	S.D.	"t"	P
Pretested	58	37.26	9.03	-0.419	0.66
Non-pretested	62	37.94	8.66		

TABLE 4

Results of a "t" Test of Differences Between the Pre-tested and Non-pretested Groups on the SEQ(X_2) Retest

Group	N	$\overline{X}$	S.D.	"t"	P
Pretested	58	39.81	7.69	0.183	0.84
Non-pretested	62	39.52	9.69		

TABLE 5

Results of a "t" Test of Differences Between the Pretested and Non-pretested Groups on the CMI Retest

Group	N	$\overline{X}$	S.D.	"t"	P
Pretested	58	36.66	4.08	1.071	0.27
Non-pretested	62	35.58	6.54		

Results

The results of these comparisons are shown in Tables 3, 4 and 5.

The results presented in Tables 3, 4 and 5 show that there were no significant differences between the pretested and non-pretested groups on the posttest dimensions of SEQ(X_1), SEQ(X_2) and CMI. Thus the hypothesis was accepted and it was concluded that the pretested and non-pretested groups did not differ significantly in their degree of state and trait anxiety and vocational maturity.

The data presented in Tables 3, 4 and 5 seems to be evidence that the initial CMI and SEQ testings did not produce a significant reactive effect.

A further check was made to ensure that the three groups were not reliably different in their degree of career decidedness prior to the introduction of experimental treatments. This was accomplished using "t" tests of differences between means of the three groups. The results of these analyses are given in Table 6.

TABLE 6

Results of "t" Tests Comparing the Initial CAF Means of Experimental Groups and the Control Group

Group	N	$\bar{X}$	"t"	P
Control (group 1)	40	2.30	-0.990	0.33
Experimental two (group 2)	40	2.13		
Control (group 1)	40	2.30	-1.140	0.26
Experimental one (group 3)	40	2.10		
Experimental two (group 2)	40	2.13	-0.128	0.90
Experimental one (group 3)	40	2.10		

Results from Table 6 indicate that the three groups were not reliably different in their degree of career decidedness prior to the experiment.

Section One: The Effectiveness of the Workshop Treatments

Rationale and Hypothesis

The general purposes in surveying the effects of the Career Information Workshops were to obtain a basis for making inferences about their effectiveness as treatments for vocational undecidedness and to strengthen the basis for inference about the empirical validity of the indecision and indecisive constructs as proposed by Goodstein (1965).

As was explained earlier in Chapter III, a three group design was used in this study. The first group (group 1) was used as a control group. It was tested on the initial and retestings on the CAF, CMI, and SEQ but did not receive any workshop treatment as a part of this study. The second (group 2) and third (group 3) were both given the initial and retest administrations of CAF, CMI, and SEQ, and both of these groups also received workshop treatments.

In performing the statistical analysis of the data for the three groups it was hypothesized that if the "informational experience" is an effective form of treatment for vocational undecidedness those subjects who experience it (group 3) will obtain higher scores on the CAF retest than subjects who did not experience it (groups 1 and 2).

Results

The means and standard deviations for the three groups on the CAF initial and retestings are reported in Table 7. The direction and magni-

tude of the difference between each group's initial and retestings on the CAF are also reported in Table 7.

TABLE 7

Data Comparing Initial and Retestings of Groups 1, 2, and 3 on the Career Assessment Form

		Initial Test			Retest			Difference
Group	Condition	N	$\overline{X}$	S.D.	N	$\overline{X}$	S.D.	$(\overline{X}_2 - \overline{X}_1)$
1	No Workshop (Group 1)	40	2.30	0.69	40	2.63	0.95	+ 0.33
2	Workshop (Group 2)	40	2.13	0.88	40	2.93	1.27	+ 0.80
3	Workshop (Group 3)	40	2.10	0.87	40	3.33	1.02	+ 1.23

An investigation of the data shown in Table 7 indicates that the subjects in group 1 had the greatest mean score on the CAF initial testing followed by groups 2 and 3 respectively. At retest the mean scores for all of the groups had increased with the greatest gain being shown by group 3 (+ 1.23) followed by groups 2 (+ 0.80) and 1 (+ 0.33).

Effectiveness of the Workshop Treatment

The question of the effectiveness of the workshop treatment was answered by utilizing a two factor analysis of variance with repeated measures on one factor as outlined by Winer (1962, pp. 298, 376). The two factors or independent variables in question were: (a) groups (experimental one, experimental two, and control), and (b) time elapsing between

the pretest and posttest measures taken on the dependent variable (the CAF scores). The results of this analysis are presented in Table 8.

TABLE 8

Two Factor Analysis of Variance with Repeated Measures on Career Decidedness as Measured by the Career Assessment Form

Source of Variation	SS	DF	MS	F	P
Group Main Effects	2.708	2	1.354	0.977	0.379
Time Main Effects	36.82	1	36.82	78.213	0.0000009
Group X Time Interaction	8.12	2	4.05	8.612	0.00032

Data from Table 8 show a difference among groups as a result of time and also an interaction effect between groups and time.

Scheffé (1953) tests were done to find out how the means differed (Edwards, 1972, pp. 150-152).

Calculations are provided in Appendix J, page 108.

TABLE 9

Results of Scheffé Tests for Group Comparisons

Comparison Groups	t(observed)	p
Groups 1 and 2	4.33	< 0.01
Groups 1 and 3	10.09	< 0.01
Groups 2 and 3	5.77	< 0.01

As can be observed from Table 9 all comparisons achieve significance at less than 0.01.

On the basis of the evidence presented in Tables 8 and 9 it is clear that the "workshop treatments" provided Groups 2 and 3 were significantly more effective as a treatment for vocational undecidedness than was the "no workshop treatment" situation provided group 1. Furthermore the workshop treatment provided group 3 was significantly more effective as a treatment for vocational undecidedness than that provided group 2. The Career Information Workshop One, described earlier in Chapter III, was the treatment provided Group 3.

Supportive Evidence of the Effectiveness of the Workshop Treatment

As further evidence of the effectiveness of the workshop treatments the investigator collected "before-and-after" data from subjects who had experienced one of the workshop treatments. Subjects from experimental one and experimental two groups (2 and 3) were asked, after the first posttesting period, to rate themselves on a scale of career decidedness before they had experienced the activities comprising their particular Career Information Workshop experience and again after experiencing these activities. (See Appendix H, page 103 for details of this activity.)

A two factor analysis of variance with repeated measures as outlined earlier in this chapter was used to analyze the effectiveness of these workshop treatments. The results of this analysis are presented in Table 10.

TABLE 10

Two Factor Analysis of Variance with Repeated Measures on Career Decidedness as Measured by the Before and After Rating Scale

Source of Variation	SS	DF	MS	F	P
Group Main Effects	0.400	1	0.400	0.229	0.6335
Time Main Effects	70.225	1	70.225	153.218	0.0000008
Group X Time Interaction	3.024	1	3.024	6.598	0.0121

Data from Table 10 show a difference among groups as a result of time and also an interaction effect between groups and time. This finding adds more support to earlier findings (see Tables 8 and 9) and the investigator concluded that subjects who experienced the "workshop treatments" showed a statistically significant gain in their degree of career decidedness.

Summary

The experimental hypothesis was supported. Subjects who experienced a Career Information Workshop exhibited significantly greater levels of vocational decidedness than those subjects who did not experience one of these "workshop treatments." Furthermore subjects who experienced the "CIW One" treatment displayed greater levels of vocational decidedness than subjects who experienced the "CIW Two" treatment. Success in demonstrating the effectiveness of an "informational experience" (CIW One) as a treatment enabled the investigator to proceed with the tests for the validity of Goodstein's (1965) constructs of indecision and indecisive-

ness as set out in the paradigm of Crites (1969) presented earlier in this study (see Figure 3).

Section Two: Tests of the Validity of the Indecision and Indecisive Constructs

Rationale and Hypothesis

As stated previously, the testing of the empirical validity of the indecision and indecisive constructs was contingent upon demonstrating the effectiveness of the Career Information Workshop as a treatment for vocational undecidedness. The rationale for this approach was outlined more fully in Chapter I of this study. Briefly stated, the experimental procedure required that the CAF retest mean score of a group receiving treatment (i.e., informational experience) be significantly greater than that of the control group. If it were not then any changes in the subjects' degree of vocational decidedness would have to be attributed to error variance in the CAF or some factor(s) other than the effects of the workshop treatment.

On the basis of evidence presented earlier in this chapter of the effectiveness of the "informational experience" as a treatment for vocational undecidedness, the tests of Goodstein's (1965) indecision and indecisive constructs follow.

The procedure used required that the subjects who had experienced the workshop treatment (group 3) be divided into two groups on the basis of their CAF scores. The first group consisted of subjects who had shown an increase in their CAF score of one or more points at retest. This group was labelled A(Ind) for purposes of this study. The second group was comprised of subjects who did not show an increase in their CAF score

at retest. This group was labelled B(Indc) for purposes of this study. The result of this procedure was that A(Ind) contained 30 subjects and B(Indc) comprised 10 subjects.

Using their CMI and SEQ retest scores as the dependent measures, it was predicted that the two groups would differ in the following ways (a) the A(Ind) group would be significantly more vocationally mature than the B(Indc) group; and (b) the A(Ind) group would exhibit significantly lower levels of state and trait anxiety than the B(Indc) group.

Results

Hypothesis I: Career Maturity Inventory Data

The first hypothesis to be tested in comparing the retest mean scores of the A(Ind) and B(Indc) groups was stated in the following manner: The A(Ind) group is significantly more vocationally mature than the B(Indc) group. A "t" test of differences between means on the CMI retest data for the two groups was performed in testing this hypothesis. The results of this comparison are shown in Table 11.

TABLE 11

Results of a "t" Test of Differences Between A(Ind) and B(Indc) Groups on the CMI Retest

Group	N	$\overline{X}$	S.D.	"t"	P
B(Indc)	10	32.8	2.86	-3.339	< 0.0001
A(Ind)	30	37.83	4.45		

The results shown in Table 11 indicate that there were significant differences in favour of the A(Ind) group which obtained significantly higher scores on the CMI retest. Thus, the hypothesis was accepted and it was concluded that the two groups did differ significantly in their degree of vocational maturity subsequent to the workshop experience.

Hypothesis II: Self-Evaluation Questionnaire Data (X_1)

The second hypothesis to be tested in comparing the two groups was stated in the following way: The B(Indc) group will exhibit significantly higher levels of state anxiety than will the A(Ind) group. In testing this hypothesis, a "t" test of differences between means was performed comparing the SEQ(X_1) retest data of the two groups. The results of this analysis are given in Table 12.

TABLE 12

Results of a "t" Test of Differences Between A(Ind) and B(Indc) Groups on the SEQ(X_1) Retest

Group	N	$\overline{X}$	S.D.	"t"	P
B(Indc)	10	40.50	10.99	2.172	< 0.05
A(Ind)	30	34.53	6.06		

As is shown in Table 12, significant differences between the A(Ind) and B(Indc) groups on the SEQ(X_1) retest exists. The B(Indc) group obtained significantly higher scores on the SEQ(X_1) retest than did the A(Ind) group. Thus the hypothesis was accepted and it was concluded that the two groups did differ significantly in their degree of state anxiety

subsequent to the workshop experience.

Hypothesis III: Self-Evaluation Questionnaire Data (X_2)

The third hypothesis to be tested in comparing the two groups was stated in the following way: The B(Indc) group will exhibit significantly higher levels of trait anxiety than will the A(Ind) group. In testing this hypothesis, a "t" test of differences between means was performed comparing the SEQ(X_2) retest data of the two groups. The results of this test are given in Table 13.

TABLE 13

Results of a "t" Test of Differences Between A(Ind) and B(Indc) Groups on the SEQ(X_2) Retest

Group	N	$\bar{X}$	S.D.	"t"	P
B(Indc)	10	43.40	9.50	1.602	0.05
A(Ind)	30	38.40	8.23		

The results shown in Table 13 indicate that significant differences between the two groups on the SEQ(X_2) retest exists. The B(Indc) group obtained significantly higher scores on the SEQ(X_2) retest than did the A(Ind) group. Thus the hypothesis was accepted and it was concluded that the two groups did differ significantly in their degree of trait anxiety subsequent to the workshop experience.

Summary

The results just presented add support to the validity of the inde-

cisive and indecision constructs as described by Goodstein (1965) for a sample of vocationally undecided secondary school students.

Section Three: Follow-up Check on Experimental Results

Approximately one month after the end of the experimental period a second data collection took place to assess the degree to which experimental results were maintained over time.

Results

The means and standard deviations for the three groups on the CAF initial and second retesting are reported in Table 14. The numbers for each group were reduced from 40 to 30 due to the inability of the investigator to retest all of the original subjects. Some subjects had left school, were on field trips, were absent from school or for a variety of other reasons were not available. Table 14 also reports the direction and magnitude of the differences between each group's initial and second retest scores on the CAF.

TABLE 14

Data Comparing Initial and Second Retestings of Groups 1, 2, and 3 on the Career Assessment Form

		Initial Test			Second Retest			Difference
Group	Condition	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	$(\bar{X}_2-\bar{X}_1)$
1	No Workshop	30	2.33	0.87	30	2.77	0.97	+ 0.44
2	Workshop	30	2.10	0.89	30	2.80	0.85	+ 0.70
3	Workshop	30	2.37	0.91	30	3.70	0.95	+ 1.33

The data shown in Table 14 indicate that the subjects in group 3 had the greatest mean score on the CAF initial testing followed by groups 1 and 2 respectively. At the second time of retesting (one month after the end of the experimental period) the mean scores for all of the groups had increased with the greatest gain being shown by group 3 (+ 1.33) followed by groups 2 (+ 0.70) and 1 (+ 0.44). These results are even more dramatic than those reported at the end of the experimental period (see Table 7 in this chapter).

Effectiveness of the Workshop Treatment

A two way analysis of variance with repeated measures on one factor as outlined earlier in this chapter was used to determine the effectiveness of the workshop treatment. The results of this analysis are presented in Table 15.

TABLE 15

Two Factor Analysis of Variance with Repeated Measures on Career Decidedness as Measured by the Follow-Up Administration of the Career Assessment Form

Source of Variation	SS	DF	MS	F	P
Group Main Effects	11.680	2	5.840	5.258	0.00698
Time Main Effects	30.425	1	30.425	82.288	0.0000009
Group X Time Interaction	6.408	2	3.204	8.665	0.00036

Data from Table 15 show a difference among groups as a result of time and also an interaction effect between groups and time.

Scheffè (1953) tests were done to find out how the means differed (calculations are provided in Appendix J, page 108).

TABLE 16

Results of Scheffè Tests for Group Comparisons

Comparison Groups	t(observed)	p
Groups 1 and 2	0.11	> 0.05
Groups 1 and 3	3.42	< 0.01
Groups 2 and 3	3.31	< 0.01

As can be observed from Table 16 two comparisons achieve significance, those between groups 1 and 3 and between groups 2 and 3. As explained earlier (see Table 6) group 1 was the control group; group 2 comprised

the experimental two group; and group 3 comprised the experimental one group. Subjects in the experimental one group received the "CIW One" treatment while subjects in the experimental two group received the "CIW Two" treatment.

Summary

Results from Tables 15 and 16 provide further evidence of the effectiveness of the "workshop treatments" for secondary school students experiencing vocational indecision. Of interest is the fact that the "CIW One" treatment was again significantly superior to the "CIW Two" treatment. These results also show that the experimental results obtained earlier in this investigation and described in Section One of this chapter have been maintained over time.

Validity of the Indecision and Indecisive Constructs

As followed earlier in this study (see Section Two) similar procedures were used to once again test the empirical validity of Goodstein's (1965) "indecision" and "indecisive" constructs.

Applying the criterion used previously in placing subjects in groups on the basis of their CAF scores resulted in 22 subjects in the A(Ind) group and 8 in the B(Indc) group. These groups were then studied to see if further evidence could be obtained to add additional support to Goodstein's constructs. The following hypotheses were tested.

Hypothesis I. The first hypothesis to be tested in comparing the second retest mean scores of the two groups was: The A(Ind) group is significantly more vocationally mature than the B(Indc) group. A "t" test of differences between means on the CMI retest data for the two

groups was performed in testing this hypothesis. The results of this comparison are shown in Table 17.

TABLE 17

Results of a "t" Test of Differences Between A(Ind) and B(Indc) Groups on the CMI Second Retest

Group	N	$\overline{X}$	S.D.	"t"	P
B(Indc)	8	35.13	2.80	-2.813	< 0.05
A(Ind)	22	38.64	3.09		

Results from Table 17 suggest that the investigator accepts the hypothesis and concludes that the two groups differ significantly in their degree of vocational maturity in the direction predicted.

Hypothesis II. The second hypothesis to be tested was stated as: The B(Indc) group will exhibit significantly higher levels of state anxiety than will the A(Ind) group. The results of a "t" test of differences between means of both groups on the SEQ(X_1) second retest data are provided in Table 18.

TABLE 18

Results of a "t" Test of Differences Between A(Ind) and B(Indc) Groups on the SEQ(X_1) Second Retest

Group	N	$\overline{X}$	S.D.	"t"	P
B(Indc)	8	37.50	7.37	2.474	<0.0099
A(Ind)	22	32.23	4.17		

As is shown in Table 18, results dictate that the hypothesis was accepted and it was concluded that the two groups differed significantly in their degree of state anxiety in the direction predicted.

Hypothesis III. The third hypothesis tested stated: The B(Indc) group will exhibit significantly higher levels of trait anxiety than will the A(Ind) group. The results of a "t" test of differences between means of both groups on the SEQ(X_2) second retest data are reported in Table 19.

TABLE 19

Results of a "t" Test of Differences Between A(Ind) and B(Indc) Groups on the SEQ(X_2) Second Retest

Group	N	$\overline{X}$	S.D.	"t"	P
B(Indc)	8	43.13	7.34	2.386	<0.013
A(Ind)	22	36.00	7.20		

As is shown in Table 19, results indicate the acceptance of the

hypothesis and it was concluded that the two groups differed significantly in their degree of trait anxiety in the direction predicted.

Summary

The results of this investigation reveal that subjects who experienced the CIW One did obtain statistically significant higher scores on the CAF scale than did subjects who did not experience it.

Subjects who had experienced this workshop were divided into two groups on the basis of their retest CAF scores. The retest means of these two groups on the CMI, SEQ(X_1) and SEQ(X_2) measures were compared by performing "t" tests of differences between means. The results of these analyses supported the experimental hypotheses regarding the differences between the groups as predicted. Thus it was concluded that the indecision and indecisive groups differed significantly in their levels of vocational maturity, state anxiety, and trait anxiety subsequent to the workshop treatment in the directions predicted.

A second data gathering procedure occurred approximately one month later and the same experimental hypotheses were tested. Results obtained confirmed earlier findings in all regards and it was concluded that the experimental findings of this investigation were maintained over the one month period of time.

CHAPTER V

DISCUSSION, RECOMMENDATIONS, AND SUMMARY

A review of the study and a discussion of conclusions and recommendations for further research is presented in this chapter.

Review of the Experiment

Sampling from a population of high school students, this investigation was undertaken as a two-part procedure which attempted to answer the general research question: Can high school students who experience difficulties in making a career decision be adequately discriminated by the constructs of indecision and indecisiveness?

The first part of this study tested the effectiveness of the Career Information Workshop as a treatment for vocational undecidedness in a high school population. A three group design which controlled for the reactive effects of the initial testing was used in making this investigation. The results of a two-factor analysis of variance of subjects' scores on the Career Assessment Form confirmed the effectiveness of the "informational experience" as a treatment for vocational undecidedness.

The procedure used in the second part of the investigation was to divide the subjects who had experienced the "informational experience" treatment into two groups on the basis of their Career Assessment Form (CAF) scores. Subjects who showed an increase in their degree of vocational decidedness as revealed by an increase of one or more points on their CAF posttest score subsequent to experiencing the workshop treatment were assigned to the first, or A(Ind), group. Subjects who did not show an increase in their degree of career decidedness were assigned to the second, or B(Indc), group.

On the basis of the formulations of Goodstein (1965) and Crites

(1969), it was predicted that the A(Ind) group would be significantly more vocationally mature, would exhibit significantly lower levels of state anxiety, and would exhibit significantly lower levels of trait anxiety, than the B(Indc) group. These predictions were tested by means of "t" tests of differences between means for the three groups on the Attitude Scale of the Career Maturity Inventory and the Self-Evaluation Questionnaire. The results of these tests confirmed the experimental hypotheses. There were significant differences between the groups in their levels of vocational maturity and state and trait anxiety. A four week follow-up confirmed that obtained experimental results were maintained over this period of time.

Conclusions

The general conclusion drawn from this investigation was that for the sample studied the constructs of indecision and indecisiveness as formulated by Goodstein (1965) and Crites (1969) describe, to some degree, vocationally undecided high school students. The following conclusions were also drawn from the research findings:

1. Vocationally undecided students differed significantly in response to treatment procedures provided them in this study. Subjects who experienced the CIW One treatment improved their level of career decidedness significantly more than subjects who experienced the CIW Two treatment or no treatment.

2. Subjects who experienced the CIW One treatment and increased in their degree of career decidedness differed from those subjects who experienced the CIW One treatment but did not improve their level of career decidedness. Specifically, the differences were that those subjects who showed an increase were significantly more vocationally mature, and exhibited significantly lower levels of state and trait anxiety.

3. The findings discussed in number two above were maintained over a period of time as determined by a second posttesting period approximately one month later.

These conclusions were drawn from clearly identified significant differences among the variables researched. Recommendations from the research findings are discussed next.

Recommendations

The results of this investigation suggest several implications for vocational counselling and topics for further research. The following recommendations are presented, followed by a separate discussion of each recommendation:

1. The results of this study should be carefully considered as a source of useful counselling interventions for secondary school students experiencing vocational undecidedness.

The enduring question facing the vocational counsellor is what counselling interventions, introduced when, will have what effect? Evidence obtained in this study clearly points out that secondary school students experiencing vocational undecidedness can be profitably sorted out into categories within the framework of Goodstein's (1965) constructs of indecision and indecisiveness. Once they are in these categories, an appropriate treatment plan can be introduced.

2. The role of anxiety in vocational undecidedness holds promise as a guide for developing suitable counselling interventions.

The results of this study indicate that anxiety plays a critical role in vocational undecidedness. Accordingly, anxiety can be the consequence of vocational undecidedness or a precursor to it. This finding is an important one in that the counsellor should consider it in determining how best to reduce the anxiety of the vocationally undecided indi-

vidual. A particular counselling intervention aimed at reducing anxiety may be helpful or harmful depending on the type of vocational undecidedness being treated. The results of this investigation indicate that for the person experiencing "vocational indecision" an appropriate intervention would be to have the person participate in activities similar to those comprising the "CIW One" treatment developed in this investigation. For the "vocationally indecisive" individual an appropriate intervention would be to deal with the conflict that creates his anxiety prior to any participation in Career Information Workshop activities.

3. The "CIW One" treatment developed for this study should be carefully scrutinized and considered as a potentially useful counselling intervention for secondary school students experiencing vocational indecision.

The results of this investigation revealed that the "workshop treatments" provided Group 2 (CIW Two) and Group 3 (CIW One) were significantly more effective as a treatment for vocational undecidedness than was the "no workshop treatment" condition provided Group 1. Furthermore the results showed that the "CIW One" treatment was significantly more effective as a treatment for vocational undecidedness than the "CIW Two" treatment. On the basis of this evidence, it seems reasonable to state that the "CIW One" treatment developed for use in this study is potentially very helpful for secondary school students experiencing vocational indecision.

4. A systematic study of the "CIW One" treatment should be undertaken to determine if all activities comprising the "workshop treatment" are necessary or if, perhaps, specific key ingredients exist among these activities that account for a significant amount of the effectiveness of this treatment.

The investigator was able to gain some insight into the effectiveness of the "CIW One" treatment by means of a study of the data collected

earlier (see Appendix F, page 98). The statistical analyses of these data are presented in Appendix I, page 105. The results of these ratings are provided in Table 20.

TABLE 20

Means of Activity Ratings for Workshops One and Two Treatments

	CIW Two (Group 2)	CIW One (Group 3)
Activity 1 $\bar{X}$	2.677	3.323
Activity 2 $\bar{X}$	3.355	3.903
Activity 3 $\bar{X}$	3.581	3.613

To determine which, if any, of the three activities comprising each "workshop treatment" were rated significantly more favourably by subjects who had experienced them, "t" tests of differences between group means on each of these activities were calculated (see Tables A, B, and C in Appendix I, page 105). Significant differences between groups were obtained for activities one and two. Activities one and two of the CIW One treatment were favoured by participants significantly more than were participant's ratings of activities one and two of the CIW Two treatment.

These results support the original intent of the investigator in the development of each "workshop treatment." The CIW Two treatment was designed to represent a typical approach to vocational counselling evident in a number of Alberta secondary schools. The CIW One treatment, on the other hand, was designed to be a potentially more effective voca-

tional counselling treatment than the CIW Two treatment. The results of this investigation clearly supported the investigator's efforts in this regard.

Data collected earlier (see Appendix F, page 98), enabled the investigator to look at the specific activities within each "workshop treatment" to determine if any of the activities were preferred to others. Since the CIW One treatment is of most interest to the investigator, the following discussion is restricted to activities comprising the CIW One treatment (see Tables D, E, and F, Appendix I, page 105).

Results show that activity two is clearly favoured over activity one whereas there is little difference between activities two and three and activities one and three. Activity two involved the completion of the Self-Directed Search and a study of results obtained.

5. The Self-Directed Search holds promise as a useful vocational counselling intervention and should be further studied as to its usefulness in this regard.

The Self-Directed Search (SDS) is intended to simulate the vocational counselling process. Results of this investigation suggest that the majority of students could use the SDS as a self-study activity to see what occupational groups require what kinds of people. The investigator assumes that activity three of the CIW One treatment (the individual counselling interview) is likely an essential and necessary follow-up to the SDS activity. The investigator further assumes that the majority of secondary school students, with a minimum amount of counsellor intervention, will benefit in doing the SDS. The chief benefit will likely be that students will find support for their personal career thinking and confirm that they are quite capable of planning well and are likely doing so. A minority of students will likely reveal their inadequacies and

need for individualized counsellor intervention. If this is the case school counsellors can then direct their resources and energies to those students experiencing vocational indecision or indecisiveness thereby providing these students with some much needed assistance.

6. The following suggestions should be carefully considered as future research possibilities which could result in a more complete understanding of vocational undecidedness.

The indecision and indecisive rubric used in this investigation has provided some insight, however vocational undecidedness is a complex phenomenon. It would seem particularly desirable to expand the scope of the present study to investigate a number of additional personality variables associated with the vocationally undecided person. This information could then be used in developing useful counselling interventions for persons exhibiting this particular vocational problem.

The sample for this study was limited to secondary school students approximately sixteen and a half years of age. To gain additional information of how individuals vary in their degrees of career decidedness, vocational maturity, and state and trait anxiety at different ages, replications of this study are recommended for samples of junior high school and younger high school students. Longitudinal research extending from junior high school through graduation from high school is recommended to obtain a more complete understanding of the dynamics of vocational undecidedness.

Summary

As a two-stage process this study attempted to ascertain the effectiveness of a Career Information Workshop as a treatment for vocational undecidedness and determine the empirical validity of Goodstein's (1965)

indecision and indecisive constructs as applied to a secondary school population.

The results of this investigation demonstrated the effectiveness of the Career Information Workshop in increasing the vocational decidedness of secondary school students. In addition, the indecision and indecisive constructs were demonstrated to possess empirical merit when applied to a secondary school population. Results were maintained over time as revealed by a collection and analysis of follow-up data.

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APPENDICES

APPENDIX A

LETTERS TO PARENTS

Edmonton Public School Board
M. E. LaZERTE COMPOSITE HIGH SCHOOL
R. P. BAKER
PRINCIPAL

Assistant Principal: D. J. Blakeman
Assistant Principal: W. Dymianiw
Assistant Principal: Mrs. E. Mills
Business Manager: G. Cruikshank

6804 - 144 Avenue
Edmonton, Alberta
T5C 3C7
Phone 476-8611

April 14, 1975.

Dear Parents:

Although a good deal of effort is expended in assisting students in their career planning, we know that we are not reaching all students. It seems that a good number of students delay any decision to the last possible moment.

Students are now involved in educational planning and registration considerations for the next school year. It seems logical that educational planning fits career planning directions. . .

Beginning next week, a series of "vocational experiences" are planned for a sampling of our grade eleven student population.

If your daughter or son is participating in these "vocational experiences" we will send you a letter next week outlining the dates and times of these activities. Please encourage your daughter or son to participate.

We have discussed our plans with students and we will be pleased to answer any of your questions.

Yours truly,

G. E. Mills,
Assistant Principal.

GEM/mca

Edmonton Public School Board

M. E. LaZERTE COMPOSITE HIGH SCHOOL

R. P. BAKER
PRINCIPAL

Assistant Principal: D. J. Blakeman
Assistant Principal: W. Dymianiw
Assistant Principal: Mrs. E. Mills
Business Manager: G. Cruikshank

6804 - 144 Avenue
Edmonton, Alberta
T5C 3C7
Phone 476-8611

April 15, 1975.

Dear Parents:

As a follow-up to my letter of April 14, I am pleased to inform you that your daughter/son has been selected to participate in our series of "vocational experience" activities.

Following are the dates and times of these sessions:

April 17, Thursday 10:00 a.m. in Room 213, 228

April 22, Tuesday 10:00 a.m. in Room 213, 228.

In addition your daughter/son will be involved in a separate individual interview during the next few weeks. He/she will be advised of the date and time.

Any questions that you may have should be directed to my office.

Yours truly,

G.E. Mills,
Assistant Principal.

GEM/mca

Edmonton Public School Board

M. E. LaZERTE COMPOSITE HIGH SCHOOL

R. P. BAKER
PRINCIPAL

Assistant Principal: D. J. Blakeman
Assistant Principal: W. Dymianiw
Assistant Principal: Mrs. E. Mills
Business Manager: G. Cruikshank

6804 - 144 Avenue
Edmonton, Alberta
T5C 3C7
Phone 476-8611

May 23, 1975.

Dear Parents:

Your daughter/son has been participating in a series of "vocational experiences" activities at the school.

Please advise your daughter/son that the final activity will be held on Wednesday, May 28 at 12:20 p.m. in the Auditorium. This activity will require approximately 20 minutes, however it is vital that each student participate.

We plan to explain the nature of this project to participating students and other interested people early next school term; however if you have any questions at this time please direct them to me.

Thank you for your co-operation.

Yours sincerely,

G. E. Mills,
Assistant Principal.

TM/mca

APPENDIX B

DIRECTIONS FOR THE FIRST ADMINISTRATION OF THE CAREER ASSESSMENT FORM

The school staff has been concerned for some time now with helping students in their career planning.

Since most of you are now, or will soon be, involved in registration plans for next year it seems timely that you think about your own career planning.

I and some of my colleagues have been asked to work with your school staff to set up a series of "vocational experiences" with a sample of grade eleven students.

These "vocational experiences" will involve group activities and individual interviews with some of you over the next month or so.

Some of the group activities will consist of

1. films
2. video-tapes
3. and resource speakers

who will be presenting ideas and information to you and picking up some of your ideas.

Each student will also have one separate individual interview which will be another means of picking up some of your ideas and leaving a few ideas for you.

A letter will be sent to your parents explaining this activity and a second letter will inform you of the date, time, and place of your group activities which will begin for those participating on Wednesday, April 16 at 10:00 a.m. Please keep that date in mind.

O.K. so the first step is for each of you to fill out this Career Assessment Form.

This will only take a few minutes. Please read it carefully and answer it frankly and honestly.

Learning how you feel about this area will help your school staff to better serve you.

Thank you.

APPENDIX C

TABLES DESCRIBING AGE, SEX, AND GRADE LEVEL OF SUBJECTS IN TREATMENT GROUPS AND THE CONTROL GROUP

TABLE A

Age, sex and grade level of subjects in treatment group A

	Age			
	15	16	17	18
Grade 11 males		9	5	1
Grade 11 females	1	13	7	1
Grade 12 males				
Grade 12 females			1	2

TABLE B

Age, sex and grade level of subjects in treatment group B

	Age			
	15	16	17	18
Grade 11 males	1	9	6	
Grade 11 females		13	6	
Grade 12 males			2	
Grade 12 females			1	2

TABLE C

Age, sex and grade level of subjects

in control group C

	Age			
	15	16	17	18
Grade 11 males	1	13	6	
Grade 11 females	2	9	4	
Grade 12 males			2	1
Grade 12 females			1	1

APPENDIX D

DO IT YOURSELF ASSIGNMENT

DO IT YOURSELF ASSIGNMENT
(this is to assist you to summarize all of the data about yourself that should be considered in making a career choice)

Title: "AS I SEE MYSELF TODAY"

This assignment requires you to comment on each one of the following:

1. Personality

2. Special Interests

3. Special Abilities

4. Educational Ambitions

5. Educational Opportunity (considering academic ability, finances, ability to study)

6. Goals and Experiences desired during lifetime

7. Course of Action necessary to achieve known goals

8. Information or Experience needed to make further decisions

APPENDIX E

PANEL RESPONSES AND RATER AGREEMENT

Part One: Directions for Raters

A. Objective

To determine from segments of audio-tapes for activity three of Career Information Workshops (CIW) One and Two, if each of the six non-school counsellors followed the prescribed framework.

B. Prescribed Framework

Objectives of interview 3 in CIW One:

1. Assist the counselee in clearing up any difficulties he or she may have had in doing the Self-Directed Search (SDS).

2. Discuss the relationship of the counselee's SDS Summary Code to occupations in the SDS Occupations Finder.

3. Discuss the entry requirements (including educational) of these occupations (if desired by the counselee).

Objectives of interview 3 in CIW Two:

1. To have the counselee focus on his or her own career planning situation.

2. To discuss (if the counselee wishes) what can be done to improve the counselee's present career planning situation.

C. Procedure

Please rate audio-tape segments presented in the following manner:

1. Determine if the counselee on record belongs to CIW One or Two, if you can.

2. Record your observation on the rating form provided.

D. Rating Form

Subject	Counsellor	I am Listening to Activity three of CIW One or Two (record CIW number)	I cannot decide

Part Two: Rater Responses

(Rater A = counsellor educator; Rater B = lay person; Rater C = doctoral candidate)

(Note: Rater A left after the 15th series of ratings.)

Counsellor on Audio-tape	Career Information Workshop Number that counselee participated in	Rating		
		Rater A	Rater B	Rater C
1	2	2	2	2
1	1	1	1	1
1	2	1	2	2
1	1	1	1	1
1	2	2	2	2
1	1	1	1	1
2	2	2	2	2
2	1	1	1	1
3	2	2	2	2
3	1	1	1	1
3	2	1	2	2
3	1	1	1	1
3	2	2	1	1
4	1	1	1	1
4	1	1	1	1
5	1		1	1
5	2		1	2
5	1		1	1
5	1		2	2
5	2		2	2
6	1		1	1
6	2		2	2
6	2		2	2
6	1		1	1

APPENDIX F

RATING SCALES FOR THE CAREER INFORMATION WORKSHOP TREATMENTS AND FOR DEGREE OF CAREER DECIDEDNESS

Directions: (Part One)

I would like your views on a couple of things. First of all you have been involved in some "vocational experience" activities recently. Please look at each activity separately and rate each activity on this 5 point scale in terms of how helpful (or useless) they have been for you. Record your answers on the paper provided you.

Rating Scale

5 = Excellent
4 = Very good
3 = Good
2 = Poor
1 = Very bad

Directions: (Part Two)

Please rate where you were in your career planning that best describes you before you were involved in these three activities that comprised your Career Information Workshop Experience on the 5 point scale provided. Next rate yourself on the same scale as to where you are right now in your career planning. Use the number on the scale that best describes you right now. Record your answers on the paper provided you.

Rating Scale

5 = I am clear in a direction for me.
4 = I have narrowed things down to a few possibilities.
3 = I am still at a tentative stage
2 = I am quite hazy about my plans.
1 = I am completely undecided.

APPENDIX G

THE PILOT STUDY

Part One: The Effectiveness of the Workshop Treatment

TABLE A

Means and Standard Deviations of Comparison Groups on the Career Assessment Form

Groups	Pretest N	Pretest $\bar{X}_1$	Pretest S.D.	Posttest N	Posttest $\bar{X}_2$	Posttest S.D.	$(\bar{X}_2-\bar{X}_1)$
No Workshop (Control)	27	1.52	0.51	27	2.26	0.94	+0.74
Workshop (Experimental)	26	1.54	0.51	26	3.23	1.24	+1.69

TABLE B

Two Factor Analysis of Variance with Repeated Measures on Career Decidedness as Measured by the Career Assessment Form

Source of Variation	SS	DF	MS	F	P
Group Main Effects	6.509	1	6.509	8.375	0.0055
Time Main Effects	39.204	1	39.204	56.541	0.000002
Group X Time Interaction	5.997	1	5.997	8.65	0.005

Part Two: Tests of the Validity of the Indecision and Indecisive Constructs

TABLE C

Results of a "t" Test of Differences Between A(Ind) and B(Indc) Groups on the VDI Retest

Group	N	$\overline{X}$	S.D.	"t"	P
A(Ind)	19	35.95	3.78	-2.938	<0.01
B(Indc)	7	30.0	6.4		

TABLE D

Results of a "t" Test of Differences Between A(Ind) and B(Indc) Groups on the SEQ-trait Retest

Group	N	$\overline{X}$	S.D.	"t"	P
A(Ind)	19	41.68	5.91	2.502	<0.01
B(Indc)	7	48.86	7.97		

APPENDIX H

BEFORE AND AFTER SELF-RATING VALUES

Group 2 (Experimental One)				Group 3 (Experimental Two)			
Before	After	Before	After	Before	After	Before	After
4	5	2	3	2	5	2	4
2	4	3	4	3	3	2	2
3	3	1	4	2	4	4	5
4	5	4	5	3	4	1	2
2	3	4	4	2	4	1	4
4	5	4	4	3	4	2	4
3	5	1	2	3	5	2	5
2	3	3	4	3	4	2	4
5	5	2	3	4	5	1	2
2	4	2	3	1	4	2	3
1	2	2	1	1	3	3	4
2	5	4	5	3	4	1	3
1	1	2	4	4	5	1	2
3	4	4	4	3	4	2	4
1	4	1	4	2	4	2	2
1	3	4	4	1	5	3	5
3	3	4	5	3	4	3	4
2	2	4	5	2	4	4	5
3	4	2	4	2	4	3	3
4	4	1	2	2	5	1	4

APPENDIX I

STATISTICAL ANALYSES OF RATINGS OF THE CAREER INFORMATION WORKSHOP TREATMENTS

TABLE A

Results of a "t" Test of Differences Between Means of Groups Two and Three on the First CIW Activity

Group	N	$\bar{X}$	S.D.	"t"	P
Two (CIW Two)	31	2.6774	0.5408	3.505	0.000877
Three (CIW One)	31	3.323	0.8713		

TABLE B

Results of a "t" Test of Differences Between Means of Groups Two and Three on the Second CIW Activity

Group	N	$\bar{X}$	S.D.	"t"	P
Two (CIW Two)	31	3.3548	0.6082	2.875	0.005565
Three (CIW One)	31	3.9032	0.8701		

TABLE C

Results of a "t" Test of Differences Between Means of Groups Two and Three on the Third Activity

Group	N	$\bar{X}$	S.D.	"t"	P
Two (CIW Two)	31	3.5806	0.7648	0.144	0.88953
Three (CIW One)	31	3.6129	1.0223		

TABLE D

Results of a "t" Test of Differences Between Activity One and Activity Two Means for Group 3

Activity	N	$\overline{X}$	S.D.	"t"	P
One	31	3.323	0.857	-2.890	0.007
Two	31	3.903	0.856		

TABLE E

Results of a "t" Test of Differences Between Activity One and Activity Three Means for Group 3

Activity	N	$\overline{X}$	S.D.	"t"	P
One	31	3.323	0.857	-1.273	0.213
Three	31	3.613	1.006		

TABLE F

Results of a "t" Test of Differences Between Activity Two and Activity Three Means for Group 3

Activity	N	$\overline{X}$	S.D.	"t"	P
Two	31	3.903	0.856	1.329	0.194
Three	31	3.613	1.006		

APPENDIX J

CALCULATIONS OF SCHEFFÉ TESTS

Scheffé (1953) tests were done to find out how the means differed. The test of significance is given by the formula $t = d_i$

$$\frac{s^2}{n} \xi a_i^2$$

which is distributed as $t' = \sqrt{F'}$. The t defined by the above formula can then be evaluated for significance by comparing it with the $\sqrt{F'}$ where $F' = (k-1)\ F$ (Edwards, 1972, pp. 150-152).

In the above formula, "d_i" is the difference between the means under comparison; "s^2" is the error mean square of the analysis of variance; "n" is the number of observations for each mean; and "a_i" is the coefficient applied to the means (e.g., in testing $\overline{X}_1$ against $\overline{X}_2$ $a_1 = 1$, $a_2 = -1$ and $a_3 = 0$).

Calculations for Table 9

The values of F required for significance at the 0.05 and 0.01 levels, respectively for df = 2 and df = 117 are 3.08 and 4.80. The values of $\sqrt{F'}$ required for significance at these levels are 2.48 and 3.10.

$\overline{X}_1 = 2.63$; $\overline{X}_2 = 2.93$; $\overline{X}_3 = 3.33$; $s^2 = 1.387$; $n = 40$; $\xi a_i^2 = 2$.

For Groups 1 and 2, $t = \dfrac{0.3}{\sqrt{\frac{1.387}{40} \times 2}} = \dfrac{0.3}{0.06935} = 4.33$

For Groups 1 and 3, $t = \dfrac{0.7}{0.06935} = 10.09$

For Groups 2 and 3, $t = \dfrac{0.4}{0.06935} = 5.77$

Calculations for Table 16

The values of F required for significance at the 0.05 and 0.01 levels, respectively for df = 2 and df = 117 are 3.08 and 4.80. The values of $\sqrt{F'}$ required for significance at these levels are 2.48 and 3.10.

$\sqrt{F'_{0.05}} = 2.59$; $\sqrt{F'_{0.01}} = 3.31$; $\overline{X}_1 = 2.77$; $\overline{X}_2 = 2.80$; $\overline{X}_3 = 3.70$; $s^2 = 1.111$;

$n = 30$; $\Sigma a_i^2 = 2$.

For Groups 1 and 2, $t = \frac{0.03}{\sqrt{\frac{1.111}{30} \times 2}} = \frac{0.03}{.272} = 0.11$

For Groups 1 and 3, $t = \frac{0.93}{0.272} = 3.42$

For Groups 2 and 3, $t = \frac{0.9}{0.272} = 3.31$

APPENDIX K

COPIES OF: CAREER ASSESSMENT FORM

ATTITUDE SCALE OF THE CAREER MATURITY INVENTORY

SELF-EVALUATION QUESTIONNAIRE

SELF-DIRECTED SEARCH

CAREER ASSESSMENT FORM

Name _____ Age _____ Sex _____
(Please Print)

Date _____ Grade _____ Phone Number _____

Which statement best describes you right now with regard to your choice of an occupation (check one)

_____ I have decided on an occupation. The occupation I have chosen is _____

_____ I have my occupational choice narrowed down to two possibilities. They are: (1) _____
(2) _____

_____ I have tentatively thought about the following possibilities as an occupation: _____
_____
_____

_____ I have a hazy understanding as to which occupation I could consider.

_____ I am completely undecided concerning my future occupation.

_____ Other (describe) _____
_____
_____